YACHTING

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How Perry Won the Battle of Lake Erie

Why One of the Most Important Naval Battles of the War Was Fought on Fresh Water. Difficulties of Building and Manning the Squadron. A Long, Stubborn, Heroic Fight, Ending in the Capture of an Entire Fleet.

By HERBERT L. STONE.

TO those not familiar with American history of the period covering the War of 1812 and 1813, the question that most forcibly impresses itself upon them is how a naval battle with such far-reaching results came to be fought on the Great Lakes, which then only marked the outermost and advanced posts of the United States, rather than on the Atlantic Ocean, on which floated Great Britain's strength, and along the western shores of which lay the center of our population, stretched along some 1,200 miles of coast line. We had practically no ships n the lakes at the opening of hostilities, with no apparent means f building any; and between the Atlantic Seaboard and Lake Ontario stretched a vast wilderness inhabited, save for a few scattered hamlets, only by Indians and trappers.

But even at that time the importance of both Lake Erie and Lake Ontario was foreseen by the United States and the British overnments and the necessity of their control was most apparent. o England the possession meant an uninterrupted means of communication between the Atlantic Seaboard of Canada and their osts in the great West and Northwest, and since the close of the merican Revolution the English ministry had maintained naval essels on both of these lakes. To America control meant support r its armies fighting along the border and the future extension estward of the various States that had been formed at the close f the Revolution.

During the War of 1812 Sackett's Harbor, on Lake Ontario, as the principal post on the Lakes and the headquarters of the mmander of that department, Capt. Chauncey; and here had en gathered a small naval force with which to operate on the wer lake and against the Canadian fleet, whose headquarters ere at Kingston, Ontario. Some forty ship carpenters had been nt up from the coast at this time to construct vessels for use on e Lakes. During the first year of the War of 1812 Lake Ontario as the scene of most of the engagements, but during the winter 1812 and 1813 strenuous efforts were made by both governents to construct larger naval forces. For England this was mparatively easy, with her means of access by way to the St. wrence River, but for the Americans the problem presented was uch more difficult; yet by the capture of that vast tract of land England known as the Territory of Michigan the control of ke Erie became imperative.

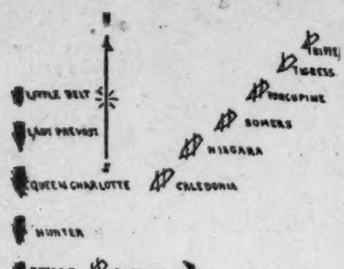
At the outbreak of the war a young Master-Commandant, iver Hazard Perry, then situated at Newport, offered his rvices to the Navy Department, with the request that he be sent "where he could meet the enemies of his country," and on the 17th of February, 1813, he was ordered to take such officers and men from the flotilla then at Newport as were adapted for service on the Great Lakes and to report at Sackett's Harbor. He no sooner received this order than he set out with one hundred men in two parties for what the sailors called a land cruise through the trackless forests to Lake Ontario. At that time, there being no roads to speak of, the main highway to the Lakes led from the Hudson River up the Mohawk Valley to Lake Oneida and down the Oswego River to the lake of that name. It was a long, dreary journey, starting in the dead of winter, and it was not until early in March that Perry and part of his contingent arrived at Sackett's Harbor.

On arrival he was immediately assigned by Capt. Chauncey to the herculean task of regaining control of Lake Erie, and on the 16th he set out for the latter body of water, arriving on the 27th of March at Erie, where he made his headquarters at Duncan's Erie Hotel. Here he found that the previous commander on the lake, Sailing-Master Dobbins, with the assistance of a New York shipwright, had laid down several vessels which were nearly completed. The work on these vessels was necessarily crude, as they were built of green wood, without the assistance of skilled shipwrights, it being stated that many of the planks and timbers found their way into the ships on the same day that the trees were felled in the forests.

Two of these vessels were brigs measuring 110 feet long in length overall, with a beam of 29 feet, one of them being named the *Lawrence* by order of the Secretary of the Navy, in honor of the commander of the ill-fated *Chesapeake*, while the other was named the *Niagara*. These two vessels, the largest of the fleet, were to play an important part in the subsequent engagement. When finished these two vessels were armed with two long twelve-pounders each and eighteen short thirty-two-pounders.

The other vessels which Perry gathered into his little squadron consisted of the brig *Caledonia*, mounting two long twenty-four-pounders and one short thirty-two-pounder; the schooner *Ariel*, four long twelves; the schooner *Tigress*, one long thirty-two; the schooner *Porcupine*, one long thirty-two; the schooner *Scorpion*, one long thirty-two and one short twenty-four; the schooner *Summers*, one long twenty-four and one short thirty-two, and the little sloop *Trippe*, one long thirty-two-pounder; in all, nine vessels, mounting fifty-four guns. This little squadron was manned by 490 men, of whom only 125 were from the regular navy, these being brought from the coast by Perry, as already told, with the addition of a few from Sackett's Harbor. The balance were volunteers, mostly raw recruits, a quarter of them being negroes, and out of the total force it is said that 116 were unfit for duty during the engagement, as they were suffering from fever and cholera morbus. The *Lawrence*, the flagship, was manned by 137, of whom only 103 were reported for duty on the day of the engagement.

On his way to Erie, Perry learned from the scattered settlers the enemy's strength, and also the fact that they were fully informed as to the progress on the American vessels and the strength of the fleet. The British fleet at that time made its head-



FIRST POSITION, SHOWING HOW THE LAWRENCE, ARIEL AND SCORPION BORE THE BRUNT OF THE FIGHT.

quarters at Malden, on the Canadian shores, near the mouth of the Detroit River, and was in command of Commander Robert H. Barclay, he having succeeded Capt. Finnis, the former commander. All of the American supplies, powder, shot, etc., had to be transported overland from the cities along the Eastern Seaboard, so that there was great difficulty and delay in getting the ships properly outfitted and manned.

By the end of July Perry's squadron was almost ready for service, and he determined to get out on the lake as soon as possible. By this time, however, the water in the lake had fallen and the port was then blockaded by the British squadron, whose commander had been kept informed of the progress of the Americans by spies, and it was impossible for Perry to get his vessels over the bar in the face of these difficulties.

Believing that the American squadron could not get out on account of the low water, Commander Barclay withdrew his fleet to the Canadian side of the lake in order to accept an invitation to dinner from the people of Port Dover, and without further preparation Perry seized this opportunity to get his two big ships over the bar, landing the guns of the Lawrence and Niagara on the beach and floating his vessels across by means of large scows launched alongside supporting massive pieces of timber run through the gun ports, thus raising the vessels several feet higher than their normal draft. This was done under cover of the night and the guns were placed on board before eight o'clock the following morning, when the British squadron reappeared and, after reconnoitering, made sail for Malden, at the upper end of the lake. On the 12th of August, Perry's little squadron being completed, he put to sea and cruised between Sandusky and Malden, looking for the British fleet, and on the 27th put into Put-in-Bay with many of his men prostrated by the lake fever.

The British squadron at this time consisted of six vessels, mounting 63 guns. These vessels were the ship *Detroit,* mounting two long twenty-four-pounders, one long eighteen, one long twelve, eight long nine-pounders and two smaller guns; the ship *Queen Charlotte,* one long twelve-pounder, two long nine-pounders and fourteen short twenty-four-pounders; the brigs *Lady Prevost* and *Hunter,* the schooner *Chippewa* and the sloop *Little Belt,* manned, according to the English statistics, by 502 men and boys. The comparative force of the two fleets was, then, according to available statistics, as follows:

	Guns.	Pounds.	Crew.
American	54	1,428	490
English	63	852	502

After remaining around Put-in-Bay for some ten days, Perry called a council of officers in his cabin, at which it was decided to make a boat attack on the British squadron, then in Malden; but before this could be done Commander Barclay had put to sea, kept in touch with his base, and on September 10th the lookout on Perry's flagship saw the English ships from the masthead, and the Americans at once weighed anchor and put out to meet them.

It was about ten o'clock in the morning when the American squadron made sail and stood out to sea. After getting clear of the harbor Perry mustered the men on his ship aft and made a short address, telling them that they were about to meet the enemy, and, in closing, unfolded a large blue flag, on which were the words, "Don't Give Up the Ship," the last words of brave Capt. Lawrence when he died on the *Chesapeake.* Asking the men if he should hoist this, it is reported that they shouted with one accord, "Aye, aye, sir!" and the flag was run up to the masthead.

The breeze was very light and the American fleet drifted slowly toward the enemy, who could be seen to the westward. The men on the American vessels were called to quarters and stood there without a word, a breathless quiet settling over the ships. It was about this time that Perry ordered a tot of grog served to the men. This was done, the mess boys passing from gun crew to gun crew. It is said that Perry then inspected his vessel, seeing that every man was at his station, and in doing so he observed a gun crew from the frigate *Constitution.* Approaching these he said, "I need not say anything to you boys. You know how to beat those fellows."

SECOND POSITION, AFTER PERRY HAD TRANSFERRED COMMAND TO THE NIAGARA. DETROIT AND QUEEN CHARLOTTE FOULED

In fighting with sailing vessels the weather gage is always a position to strive for, and Perry was endeavoring to obtain this, but the wind was shifting and Perry gave the order to run to the lee side of the islands, upon which one of the officers spoke up and reminded him that if he did so they would have to engage from leeward, to which Perry answered: "It makes no difference; to windward or leeward, they must fight to-day."

At a little before noon the two fleets were still about a mile apart, when the British flagship *Detroit,* leading the squadron, discharged a twenty-four-pounder at the *Lawrence,* thus firing the first shot of the battle. The shot went wide, and five minutes later the *Detroit* fired a second shot, which struck the *Lawrence* on the starboard side, scattering splinters over the men at the guns. Not able to hold his fire any longer, Sailing-Master Champlin, of the *Scorpion,* cut loose a thirty-two-pounder on the *Detroit,* firing the first shot on the American side, and this was followed immediately by shots from the *Ariel.* The *Queen Charlotte* then opened, and, as the fleets were drawing closer together, the leading vessels were soon engaged, the *Lawrence* not opening fire until she had been hit in several places by the *Queen Charlotte* and the *Detroit,* the enemy centering the fire of his first three ships on the American flagship.

As the enemy's long guns were playing havoc with the *Lawrence,* Perry decided to get to close quarters as quickly as possible and he made sail to execute the maneuver, signalling the rest of the Americans to do the same, though the following vessel, the *Caledonia,* being but a poor sailor, blocked the rest of the line so that the balance of the ships were separated by some distance from the flagship, Perry having previously ordered them to preserve their stations in the line.

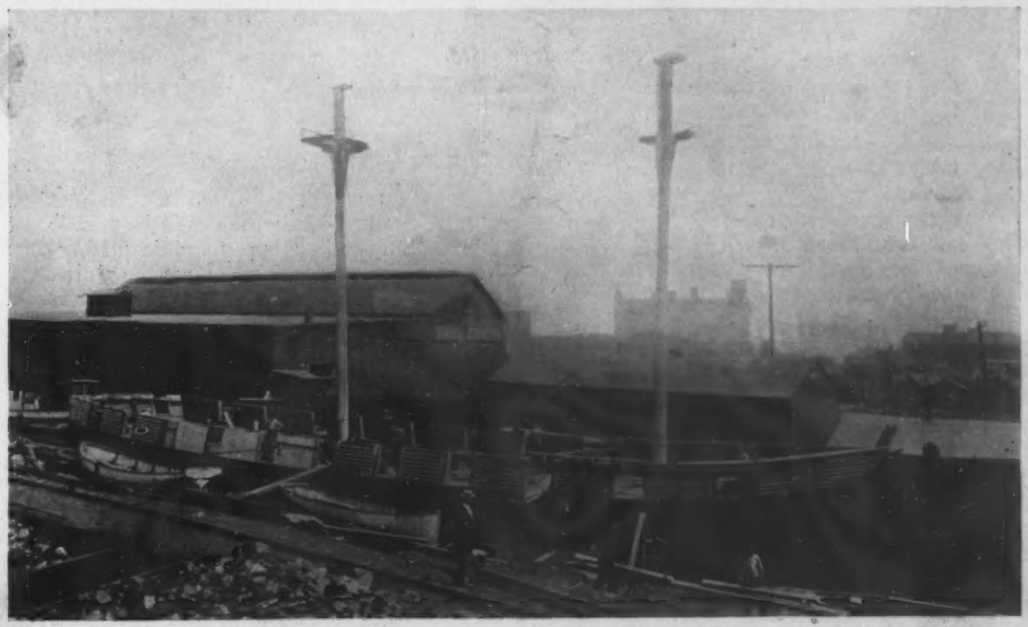
The *Lawrence* backed her topsails when the enemy were some 400 yards distant, and again opened fire, the two American ships close to her engaging the Chippewa at the same time. These two vessels, the *Ariel* and the *Scorpion,* had no bulwarks of any height and their crews were exposed to the full fire of the enemy, yet their officers brought them into close action and materially assisted in drawing the fire from the *Lawrence* at this stage, the rest of the American squadron being by this time beyond supporting distance.

For over an hour Perry fought the three leading British ships, *Detroit, Hunter* and *Queen Charlotte,* and soon afterward the *Lady Prevost* was brought into action against her, the odds being greatly against the Americans, in addition to which the armament of the British squadron was greatly in its favor, there being thirty-two long guns in these four vessels, against seven long guns in the Lawrence. The American flagship suffered heavily in this concentrated fire and was soon reduced to nothing more than a wreck, as far as her top hamper and bulwarks went, while her guns were disabled and put out of action one by one. The carnage on deck was frightful, eighty-three of her crew having been killed or wounded out of her total complement of 103 fit for duty. Perry's younger brother, James, was one of the wounded, though

he fortunately recovered. The navy historian, Maclay, is authority for the following conversation at this stage of the fight:

"Toward the close of the action First-Lieutenant John J. Yarnall, with his face badly lacerated, came to Perry and said: 'All the officers of my division are cut down. Can I have others?' Perry detailed several of his aids, but in a few minutes Lieutenant Yarnall, with fresh wounds, again returned and said: 'These officers also have been cut down. I need more.' Perry replied: 'I have no more to give you. You must endeavor to make out by yourself.' 'All right, sir,' was the grim response, and the heroic officer returned to his division and directed every gun with his own hands. He was wounded three times, and three times he left the cockpit in order to return to his post."

The unequal contest went on until about 2.30 P. M., with the *Lawrence* bearing the brunt of the attack, bravely supported by the schooners *Ariel and Scorpion*. However, the fickle breezes were kind, and about this time the wind freshened and the *Niagara*, in command of Master-Commandant Elliott, was able to come up and engage some of those vessels that were fighting the *Lawrence*. As the flagship, unmanageable, with her masts shot away, drifted out of action, Perry, seeing the *Niagara* coming down, apparently uninjured, resolved to change his flag to her. Turning over the command to his First-Lieutenant Yarnall, with orders not to give up the ship, Perry called for the boat's crew, and with his brother James and four seamen got into her, with his broad pennant and the flag "Don't Give Up the Ship" tucked under his arm, and started across the water for the *Niagara*, taking advantage of the heavy smoke that then hung over the scene of battle.



THE BRIG NIAGARA, TO WHICH PERRY TRANSFERRED HIS FLAG DURING THE FIGHT. AFTER LAYING AT THE BOTTOM OF LAKE ERIE FOR NEARLY A CENTURY, SHE HAS BEEN RAISED AND RESTORED

Before reaching his goal, however, the smoke lifted and he was seen by the British ships, who brought several guns to bear on the small boat, and though one of the shots struck the boat she reached the side of the *Niagara* in safety. The *Lawrence* being still within gunshot, and with every gun disabled and nearly every man killed or wounded, Lieutenant Yarnall decided to surrender and hauled down his flag. The English, however, were unable to take possession, owing to the persistence of the other American vessels, the *Niagara* now engaging them.

About this time the *Queen Charlotte* and the *Detroit*, in maneuvering to bring their opposite batteries to bear, fouled one another and could not get clear, on which the *Niagara* signalled for close action, put her helm up and ran across the bow and stern to the two vessels as they lay side by side, raking them forward and aft. The other vessels followed the *Niagara's* example and for some ten minutes kept up a brisk fire at close quarters.

After some fifteen minutes of this fire, during which the British vessels suffered terrible losses, especially the *Queen Charlotte* and *Detroit*, a white flag was seen waving from the quarter deck of the *Hunter* as a signal of surrender, upon which the *Niagara* ceased firing and ordered the rest of the fleet to do likewise, as the enemy had struck. In the smoke of battle two of the enemy's smaller vessels made sail and attempted to escape in the confusion, but they were chased by the *Trippe* and *Scorpion* and captured.

Appreciating that the battle had been won by his flagship, *Lawrence*, and the brave men on her, Perry conceived the idea of receiving the surrender of the British squadron on the deck of his old flagship, and again taking his pennant in his hand he boarded a small boat and was rowed back to the blood-stained *Lawrence*. Maclay says of this incident:

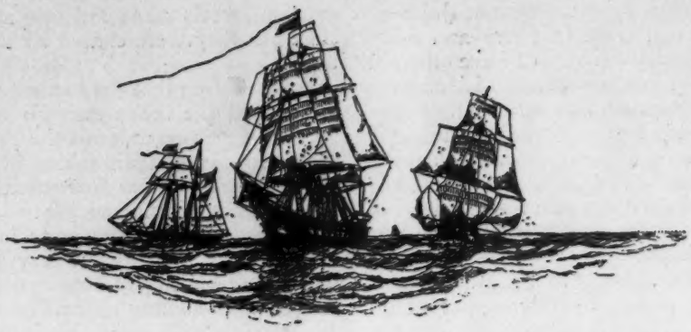
"As soon as the survivors in the *Lawrence* learned that the English had surrendered they gave three feeble cheers. Even when afar off they recognized Perry in the boat, and the news that he was coming aboard quickly spread throughout the brig, while those who were able gathered at the gangway. As they stood there, awaiting their commander, they formed a striking group. Few of them were uninjured. Many of them had an arm or leg bound and splintered; others had blood-soaked bandages around their heads or other parts of the body; the clothing of all was torn and steeped in gore, while their faces and arms were blackened with the grime of burned powder, and had it not been for the streams of perspiration that had furrowed down their faces, revealing streaks of white skin, they might well have been taken for black men.

"The surviving officers from the different English vessels now began to arrive alongside of the *Lawrence*. One by one they stepped over the gangway and cast a wondering glance at the destruction and butchery they had caused and the great sufferings the Americans had endured. Then, carefully picking their way over the bodies of the slain, they went aft, where Perry, in quiet dignity, stood to receive them. As each one presented his sword the American commander bade him retain it.

"Immediately on receiving the surrender Perry wrote with a pencil on the back of an old letter, using his cap for a desk, his famous dispatch: 'We have met the enemy and they are ours—two ships, two brigs, one schooner and one sloop,' which he sent to General William Henry Harrison by Midshipman Forrest."

On the American squadron the total number of killed was twenty-seven, of whom twenty-two were killed on the flagship *Lawrence*, and ninety-six wounded, a total of one hundred and twenty-three. The killed included twelve quarter-deck officers. The British loss was forty-one killed and ninety-four wounded, a total of one hundred and thirty-five. Among the wounded was the gallant Commander Barclay himself. He was shot once through the thigh and again in the shoulder.

As a result of this gallant fight the British line in the west was broken and American success was assured despite serious reverses in land engagements that threatened complete disaster.



The Battle of Lake Erie

A Volunteer's Story.

(About three-fourths of the American crews were made up of volunteers hastily enlisted and drilled.)

By FREDERIC HENTZ ADAMS.

EIGHT and twenty was Perry then,
Sailor of sailors and man of men;
Some were sailors and all were *men*
Sailing with him to battle.

"Sail ho!" bawled from the flagship's mast—
Wearying wait and search were past,
Barclay starved from his lair at last!
Eager were we to meet him.

'Twas to Taylor did Perry say:
"Windward or leeward, they fight to-day!"
Hearts were leaning to Perry's way,—
He was a man to fight for.

God rules lakes as He rules the seas,
Out of His hand came the fav'ring breeze,
Smelling sweet of the fields and trees,—
Brightly the sun was shining.

Lawrence's words flew high in pride:
"Hoist them or not, lads?" had Perry cried.
One great shout, when the crew replied,
Broke like a cheer: "Aye, aye, sir!"

"Hoist away!" and our motto met
Signals that said "Under way to get."
We turned to and the decks we wet,—
Thoroughly wet and sanded.

Rations then, with a tot of rum,
So we be fit for the work to come:
Briskly sounded the fife and drum
Calling all hands to quarters.

Silence fell as a frost might fall,
Chilling the blood by its sudden call;
Perry came with a word for all,
Soon were we warm with cheering.

Smiling kindly, the deck he paced:
Sudden he stopped and a squad he faced
Bare of foot and above the waist,
With handkerchiefs 'round their foreheads.

"Constitutions," he said, "and you,
Boys of old Newport, know what to do;
Nothing more need I say to you,—
You'll do your duty, I warrant!"

Then he turned and walked slowly aft.
Under our voices we joked and chaffed,
Dreading silence. The British craft
Lay a good league to leeward.

Time seemed dead that September day—
Slowly, so slowly our ships made way—
Dead, till faintly across the bay
Sang the enemy's bugle.

Hove to gallantly, trim and fine,
Heading near west, lay his battle-line—
Snowy sails with the sun ashine,
Ensigns of red unfurling.

Fiercer red was the belch of flame
Straight from the side of his flagship came,
Short in range, but of goodly aim—
Barclay had sent his greeting!

Red again did his welcome flash,
Coming aboard with a rip and crash,
Sending part of our rail to smash:
Perry was waiting, waiting.

Too much that for the Scorpion!
Champlin let drive with a single gun.
Shortly, Perry cried: "Give them one
From your twelve-pounder, Yarnall!"

Saucy Ariel, on our bow,
Brave Caledonia opened now;
Last, Niagara joined the row—
None but the long guns reaching.

Heavy odds for the Briton played,
Save we could fight with the carronade:
Only Elliott disobeyed
Perry's command for closing.

Barclay held with a bloody grip
Three of his best on our gallant ship;
Down came the spars with their sails astrip,
Crushing the men beneath them.

Crushing men and what once were men—
Never to work at the guns again.
Death seemed old in that slaughter-pen
And dull as the smoke around us.

Death seemed dull, for it made no moan.
Wailing the battle's wild undertone
Pain laid hold of our heart's alone,
Hot with the joy of fighting.

Three grim hours we stood the fray,
Braces and bowlines all shot away:
Perry saw that a great chance lay
Still in the fresh Niagara.

Proudly standing, the Commodore
Straight 'tween the splashings of shot we bore,
Fame gave speed to the sailor's oar,
Fortune the boat defended.

"Now, Niagara, yours the turn;
Fights are not won by a powder burn.
Why the gunboats so far astern?"
"I'll bring them up," said Elliott.

Down we bore like a swooping gull,
Rudely to shatter the battle's lull.
(Lawrence, naught but a mangled hull,
Struck, and they thought they'd whipped us).

Barclay making attempt to wear
So he could bring his fresh guns to bear,
Fouled the Charlotte, and then and there
Perry was quick to profit:

Heading into the gap, he played
Starboard and larboard a cannonade,
Whereof such was the havoc made
Certain we felt of winning.

Ariel closed with their broken line,
Somers, Trippe, Tigress and Porcupine,
Caledonia, brave and fine;
Scorpion—all were with her.

Seldom pausing to reck or rue,
Britons were fighting as Britons do;
Grape and canister tore them through,
Spilling their life blood 'round them.

Ne'er a song or a story writ
Ever can speak the wild joy of it—
Crash and cheer when a lucky hit
Tells to the foe's confusion.

Raking fire will win at last,
Brave of the bravest 'twill hold aghast;
Soon the triumphing hail was passed:
"Enemy struck! Cease firing!"

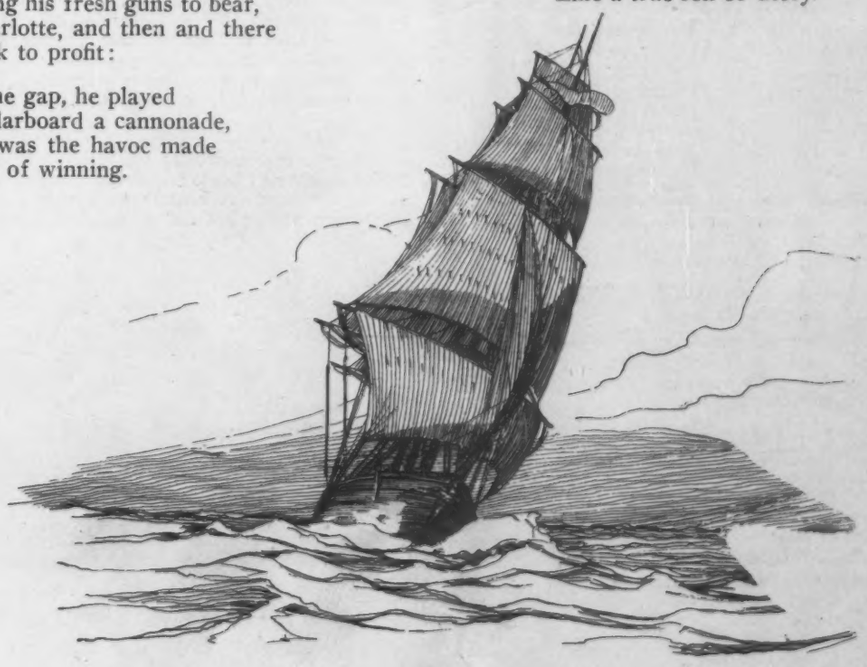
Slowly drifted the smoke away,
Mingled together the squadrons lay:
One was lost on that bloody day—
First in all Britain's story!

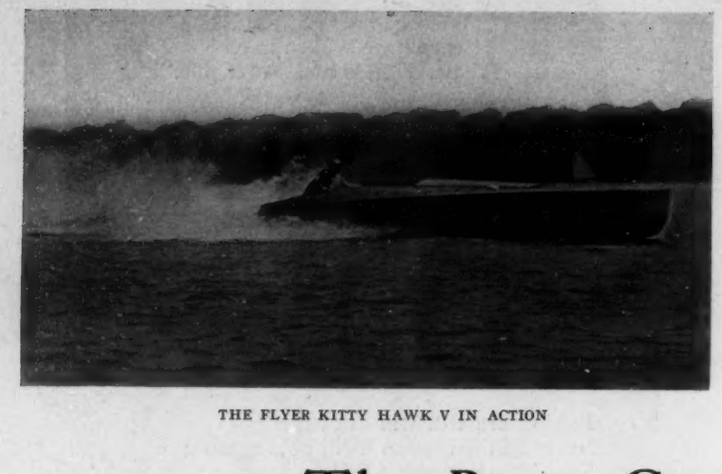
We were following cheer with cheer;
Crossing the wind like an echo drear,
Brave, but wofully faint to hear,
Came other sounds of cheering.

Perry spoke: "I well know your claim,
First of my ships, and be yours the fame—
Nobly bore you a hero's name—
Yours be the wreath of Victory!

"Row me back to the Lawrence, then;
Grateful to walk her red deck again."
There he stood when King George's men
Offered their swords in surrender.

One by one were the swords declined;
Quiet his speech and his words were kind—
Mild was he and of gen'rous mind,
Like a true son of Glory.





THE FLYER KITTY HAWK V IN ACTION

KITTY HAWK, JR., H. H. TIMKEN'S LITTLE 20-FOOTER

The Perry Centennial Regatta

Full Programme for the Week of Power Boat Racing at Toledo and Put-in-Bay, July 28 to August 2. Rules and Handicaps.

POWER BOAT REGATTA COMMITTEE

Commodore C. W. Kotcher, chairman, D. B. C. Y.; Commodore P. C. Jones, M. R. Y. C.; Commodore Harold Kelley, M. B. C. B.; Commodore J. H. Lucas, C. P. C.; Commodore George T. Bliss, E. Y. C.; Commodore Henry W. Hess, T. Y. C.; George E. Hardy, T Y. C. Eugene M. Emmons, secretary committee; Ira Hand, Eastern representative.

JUDGES

Commodore F. R. Still, chairman; Commodore E. S. Osborn, Commodore W. J. Gunnell, J. W. Hubbard, Fred D. Lawley, Charles King, Ira Hand, Commodore W. F. Bishop, Commodore F. C. Smith, Commodore St. C. Ede, Commodore Max C. Starkloff, M. D.; Rear-Admiral J. W. Dickson, Commodore W. E. Hughey.

POWER BOAT RULES COMMITTEE

P. C. Jones, chairman, M. R. Y. C.; Henry W. Hess, T. Y. C.; George E. Hardy, T. Y. C.

Classes will be designated as follows:

NATIONAL ASSOCIATION OF ENGINE AND BOAT MANUFACTURERS' CARNIVAL

Class	*Type*	*Measurements*
A	Speed	33 feet and under
B	Speed	40 feet and over
C	Speed	Under 40 feet
D	Cruiser	60 feet and over
E	Cabin Launch	40 to 60 feet

PERRY CENTENNIAL REGATTA

Class	*Type*	*Measurements*
L	Hydroplane	Under 20 feet
R	Hydroplane	Under 26 feet
S	Hydroplane	Under 32 feet
T	Hydroplane	Under 40 feet
D	Cruiser	60 feet and over
E	Cruiser	40 to 60 feet
F	Cruiser	Under 40 feet

Conditions and rules governing events of the National Association of Engine and Boat Manufacturers' carnival or races, and all boats sailing therein shall be under the control and direction of the Power Boat Regatta Committee and judges of the Inter-Lake Yachting Association. All matters shall be subject to their approval and control, and all questions and disputes which may arise shall be decided by them.

The Perry Centennial Racing Events and the National Association of Engine and Boat Manufacturers' Events will be conducted entirely separate by reason of specific conditions outlined in the deeds of gift of the five National Association trophies.

THE NATIONAL ASSOCIATION OF ENGINE AND BOAT MANUFACTURERS' PRIZES

These trophies consist of five in all. They are perpetual trophies and raced for under their respective deeds of gift.

The International World's Championship Trophy is offered to challengers in Class C, speed boats under 40 feet over-all length, course 3 miles, no handicap, flying one gun start. There are three heats for this trophy and winner determined by point system.

The National Championship Trophy is open to challengers in Class R speed boats of 40 feet or more over-all length, course of 21 miles handicap race, boats starting on their handicap time allowance and winner determined by point system.

The Inter-State Championship Trophy is open to challengers in Class A, speed boats under 33 feet over-all length, course of 21 miles handicap race, boats starting on handicap time allowance and winner determined by point system.

The Motor Yacht Championship Trophy is open to challenge for boats in Class D, motor yachts 60 feet or more over-all length, course of 21 miles handicap race, starts made on handicap time allowance, winner determined by point system.

Cabin Launch Championship Trophy is open to challengers in Class E, cabin-launch type of boats 40 to 60 feet over-all length, course of 5 miles handicap race, all boats started on their handicap time allowance, winner determined by point system.

PRIZES

In each race each boat competing will be credited with as many points as the number of boats she defeats, with one point added as premium for sailing the race. A boat that starts but does not finish will receive no points, but will be counted as a defeated boat in the crediting of points

he boats that complete the race. The award of points will be made each ay on the basis of the largest number of boats starting on any day, it eing assumed for the purpose of this computation that the number of oats starting in a class is the same each day. A boat which starts in a ace but does not finish within one hour after sunset shall receive no points or that race.

All National Association of Engine and Boat Manufacturers' races ill be under the 1913 rules and handicaps of the American Power Boat ssociation.

CONDITIONS AND RULES GOVERNING EVENTS OF THE PERRY CENTENNIAL REGATTA

All races and all boats sailing therein shall be under the control and irection of the regatta committee and judges of the Inter-Lake Yachting ssociation. All matters shall be subject to their approval and control, nd all questions and disputes which may arise shall be decided by them.

Their decision shall be based on rules as published, but as no rules can e devised capable of meeting every incident and accident of sailing, the ommittee will keep in view the ordinary customs of the sea and discourage ll attempts to win races by other than superior skill and speed. The de- ision of the committee shall be final. No member of any committee shall ake part in the decision of any question in which he is directly interested.

These races will be conducted separate and distinct from the National ssociation of Engine and Boat Manufacturers' events, and upon no estrictions whatever except for classification in length over all.

Prizes for Perry Centennial Events will be awarded in cash or mer- handise at the option of the winner. It will be necessary, however, for e entrant in any Perry Centennial Event to declare on his entry blank hether he shall accept cash or merchandise prizes.

BANG-AND-GO-BACK RULES

First—Entry blank for these series will be required, giving name of e boat, owner, club and port; also the over-all length and type of boat.

Second—A preparatory gun will be fired five minutes before starting un, both signals being fired from the committee boat at starting line.

Third—The course will be a triangular one. All boats in one class art together with the starting gun. At some time, totally unknown to ny of the contestants, another gun or bomb will be fired from Rattle- nake Island, which gun or bomb will be the signal to turn to the right and turn by the same course to the starting point, which will be the finishing ne.

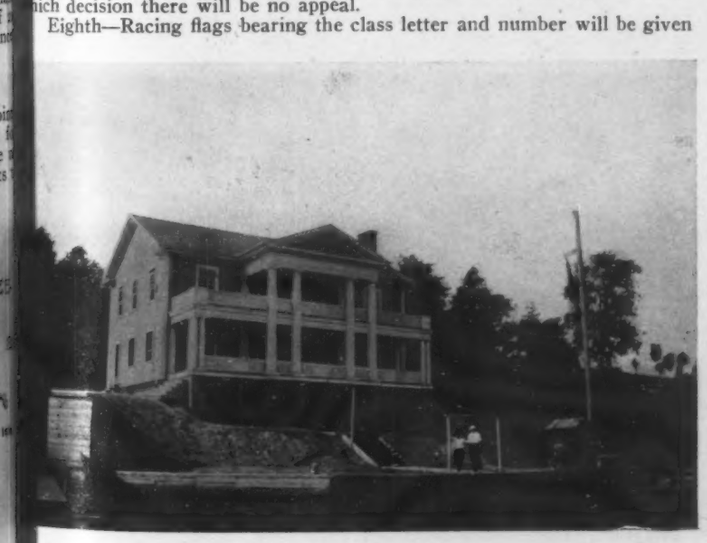
Fourth—Every contestant is expected to run a fair race at his best peed from start to finish.

Fifth—However, as conditions affect the various boats differently all ntestants will be allowed to make the return trip in a few seconds less me than the time between starting and turning signals, but to prevent ckeying and to assure a fair race, nobody but one of the judges selected that body will know what the time reduction will be until after turning gnal is given, when he will deliver same to the other judges under seal.

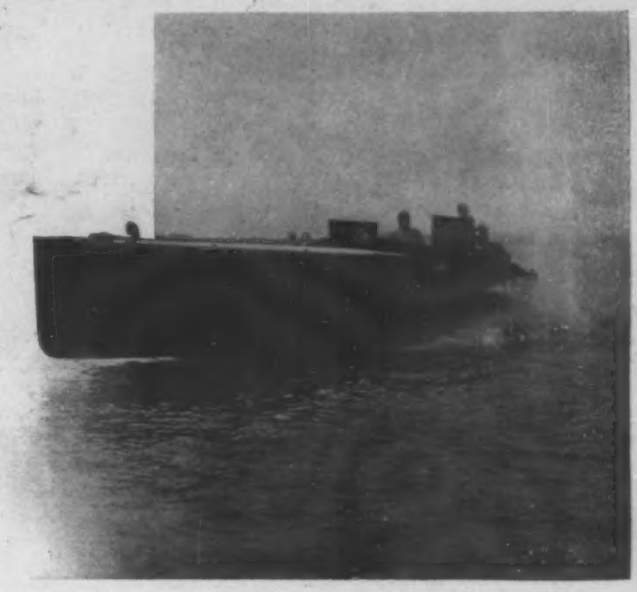
Sixth—Any boats making the course and crossing the finishing line in ss time than the sum of the outgoing time, plus the reduced returning me, will be penalized by doubling the outgoing time and adding twice the duction above allowed, and will be accredited with having finished in ch position as this corrected time would indicate.

Seventh—If, in the opinion of the judges, one or more of the contest- nts have not complied with the spirit and intent of the above conditions d have failed to run a fair race, such contestant may be disqualified, from hich decision there will be no appeal.

Eighth—Racing flags bearing the class letter and number will be given each entrant, which must be secured to the hull on the right and left bow, or elsewhere, as the judges may direct.



MAUMEE RIVER YACHT CLUB, A SCENE OF UNUSUAL ACTIVITY DURING THE REGATTA



SPEED DEMON RELIANCE, COMMODORE BLACKTON'S FLYER, WHICH IS EXPECTED TO DO THINGS AT PUT-IN-BAY

The foregoing rules, conditions and prizes are subject to change by the regatta committee.

IMPORTANT NOTICES

There will be no entrance fees.

There will be a bulletin board at headquarters where changes in programme and special instructions will be posted throughout the week.

Headquarters at Toledo, Toledo Yacht Club; headquarters at Put-in-Bay, Doller's Boat House, and the secretary-treasurer and regatta committee may be found at headquarters from 7 A. M. to 6 P. M.

A revenue cutter has been detailed by the Treasury Department at Washington to patrol the courses. She will be assisted by other boats appointed by her captain. They will have authority to enforce the regulations, and will display a blue flag with white letter P.

The Events

PERRY CENTENNIAL CLASS CHAMPIONSHIP RACES, TOLEDO, OHIO

Distance, 20 miles; no handicap rules; cash or trophy; hydroplane type.

Tuesday, July 29, 11:00 A. M.—Class L, heat 1; measurements, under 20 feet. 11:10 A. M.—Class R, heat 1; measurements, under 26 feet. 11:20 A. M..—Class S, heat 1; measurements, under 32 feet. 11:30 A. M.—Class T, heat 1; measurements, under 40 feet. 1:00 P. M.—Class L, heat 2; measurements, under 20 feet. 1:10 P. M.—Class R, heat 2; measurements, under 26 feet. 1:20 P. M.—Class S, heat 2; measurements, under 32 feet. 1:30 P. M.—Class T, heat 2; measurements, under 40 feet. 3:00 P. M.—Class L, heat 3; measurements, under 20 feet. 3:10 P. M.—Class R, heat 3; measurements, under 26 feet. 3:20 P. M.—Class S, heat 3; measurements, under 32 feet. 3:30 P. M.—Class T, heat 3; measurements, under 40 feet.

$1,800 prize money will be distributed between Classes L, R, S and T, as follows: Firsts, $300 in each class; seconds, $100 in each class; thirds, $50 in each class. No third prize will be given unless at least five boats start in the first heat. In addition to the above, championship cups and flags will be awarded the winner in each class.

PERRY CENTENNIAL FINAL FREE-FOR-ALL, TOLEDO, OHIO

Tuesday, July 29, 5:00 P. M.—Distance, 30 miles; handicap rules, none; trophy, cash; class, all; type, hydroplane; measurements, all lengths.

First prize, $1,500; second prize, $800; third prize, $500. No third prize will be given unless at least five boats start in this race. A valuable trophy and championship flag will be awarded the winner.

SQUADRON CRUISE TO PUT-IN-BAY

Wednesday, July 30, 7:30 A. M. Prompt.—The fleet will rendezvous off the Toledo Yacht Club, and move promptly at time stated above. The flagship, Priscilla, with Commodore George H. Worthington in command, will lead, the fleet following in single file. International Code of Signals will be used.

AT PUT-IN-BAY, OHIO

Perry Centennial bang-and-go-back races for cruisers. Bang-and-go-back rules. Prize, cash or trophy. Cruiser type.

MARIE II, A STERLING 20-FOOTER, COMING OVER FROM CANADA

Wednesday, July 30, 2:30 P. M.—Class, D; measurements, 60 feet and over. Class, E; measurements, 40 to 60 feet. Class, F; measurements, under 40 feet.

$600 prize money will be distributed between Classes D, E and F, as follows: Firsts, $100 in each class; seconds, $60 in each class; thirds, $40 in each class.

PERRY CENTENNIAL BANG-AND-GO-BACK RACES FOR SPEED BOATS

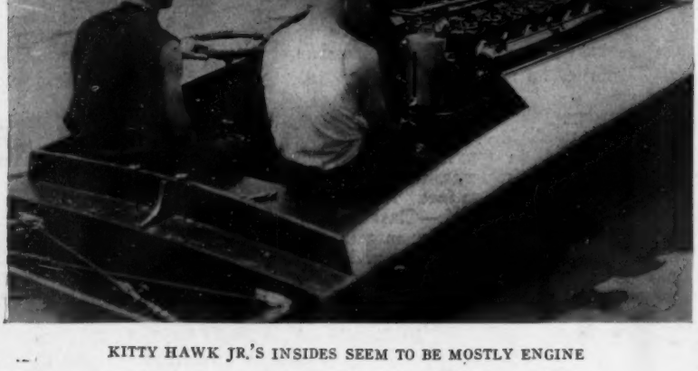
Bang-and-go-back rules. Cash trophy. Open type.

Thursday, July 31, 9:00 A. M.—Class, L; measurements, under 20 feet. Class, R; measurements, under 26 feet. Class, S; measurements, under 32 feet. Class, T; measurements, under 40 feet.

$800 prize money will be distributed between Classes L, R, S and T, as follows: Firsts, $100 in each class; seconds, $60 in each class; thirds, $40 in each class.

NATIONAL ASSOCIATION SERIES FOR CLASSES D AND E RACES AT PUT-IN-BAY

Distance, 21 miles; A. P. B. A. rules; prize trophy.



KITTY HAWK JR.'S INSIDES SEEM TO BE MOSTLY ENGINE

Thursday, July 31, 10:00 A. M.—Class, D; type, cruiser; heat, 1; measurements, 60 feet and over.

10:10 A. M.—Class, E; type, cabin launch; heat, 1; measurements, 40 to 60 feet.

2:00 P. M.—Class, D; type, cruiser; heat, 2; measurements, 60 feet and over.

2:10 P. M.—Class, E; type, cabin launch; heat, 2; measurements, 40 to 60 feet.

Friday, August 1, 9:00 A. M.—Distance, 21 miles; rules, A. P. B. A.; trophy, cup; Class, D; type, cruiser; heat, 3; measurements, 60 feet and over.

9:10 A. M.—Distance, 21 miles; rules, A. P. B. A.; trophy, cup; Class, E; type, cabin launch; heat, 3; measurements, 40 to 60 feet.

1:30 P. M.—Squadron sail. The fleet will sail in single file, led by the flagship Priscilla. Watch for signals.

4:00 P. M.—Dress ship. Review of the fleet by the commodore and staff, accompanied by the officers and chairmen of active committees. The commodore will leave the flagship and pass through the lines. As the party passes, each yacht will salute with one gun or by dipping colors.

9:00 P. M.—Grand ball at Colonial Pavilion. Tickets can be secu from the entertainment committee, ashore or at headquarters. Price, $1

PERRY CENTENNIAL CRUISER FREE-FOR-ALL FOR CLASSES D, E AND F

Saturday, August 2, 8:00 A. M.—Put-in-Bay to stake boat off W Sister Island and return, 32 miles.

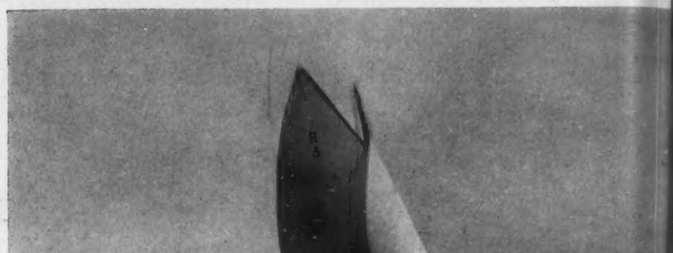
First, $200 in each class; second, $120 in each class; third, $80 in e class. In addition to the above, valuable trophies and championship fl will be awarded to the winners.

PERRY CENTENNIAL FREE-FOR-ALL

Saturday, August 2, 2:00 P. M.—Distance, 30 miles; rules, no prize, trophy or cash; class, all; type, open; measurements, all.

Perry Centennial free-for-all open boats. First prize, $250 and cha pionship flag; second prize, $150; third prize, $100.

Saturday, August 2, 4:00 P. M.—Distance, 30 miles; rules, no trophy, cash; class, all; type, hydros; measurements, all.



PSAMMAID II, THE NEW GARDNER CLASS R BOAT, FINISHING AHEAD OF ALL COMPETITORS

Perry Centennial free-for-all hydroplanes. First prize, $500 and ch pionship flag; second prize, $300; third prize, $200.

8:00 P. M.—Distribution of prizes.

The most complete, best equipped and best appearing cruising m boat: First prize, $60; second prize, $40; third prize, $20.

The most complete, best equipped and best appearing open motor b First prize, $40; second prize, $30; third prize, $20.

Best illuminated yacht. First prize, $60; second prize, $40; t prize, $20.

Race for yacht tenders. (Day, time and course will be announce bulletin board.) Any tender 25 feet over-all length or under, excep hydroplanes, that is regularly carried on any yacht, is eligible. First p $40; second prize, $20; third prize, $10.

KITTY HAWK V'S TWELVE EXHAUST PIPES, AND THE OWNER, H. H. TIMK AT THE WHEEL

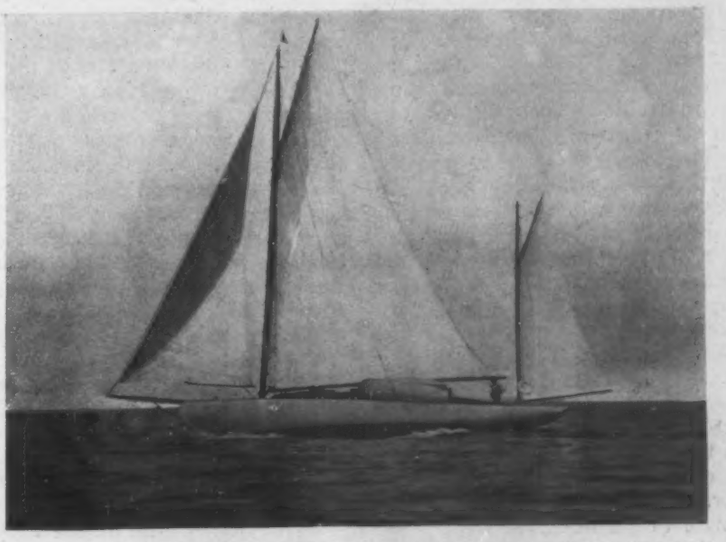
Knocking About the Chesapeake

With Extracts from Serena's Log While on a Race from the Potomac to Annapolis and Down to the Southern End of the Great Bay

By WM. B. LAUB, JR.

DRY and unvarnished" would aptly describe the logs of most cruises, especially those of the average power boat, but read between the lines of a real windjammer's cruise record and you will generally discover things which thrilled her crew and set their blood atingle—incidents which will hold your interest though the scenes are laid on unfamiliar waters. Such a log is that of the yawl Serena, of Washington, D. C.; and though this narrative of one of her most interesting jaunts deals not with Hatteras dangers, Gulf Stream squalls, of buffetings by such waters as some of you deepwater men laugh at, I am going to spin the yarn with full assurance that when my ink has run dry and the good ship is again at her mooring in the upper reaches of the Potomac, you who have been constrained to follow her fortunes, will have a wholesome respect for the Chesapeake as a sailorman's stamping ground, to say nothing of the boat that stamped it.

The Serena is an amateur's boat from keel to truck. Designed and built by a student of a Washington high school who at the start knew little more than the difference between a deck and a rudder, she is worthy of brief but thorough description before anchor is weighed and the watches chosen. From nose to transom Serena's official measurement is 43 feet and her water line and breadth measure respectively 28 and 12 feet. Her type is generally known as a "K. C. B." yawl, which being translated means that a ten-foot iron centerboard houses in her keel, which draws about four feet of water and consists largely of iron, weighing in the neighborhood of two tons. Her cabin is about 17 feet long and the space therein is cleverly subdivided into a stateroom forward, sleeping two; main cabin amidships (two bunks and two shelves), and a galley aft on the port side. Of course there are lockers and drawers galore and a toilet is located between the stateroom and the main cabin, on the port side. Serena's sail area is 1140 square feet, divided into 234 feet in the jib, 719 feet in the mainsail and 187 in the jigger, and of course we carry such necessary evils as a spinnaker, balloon jib and jigger staysail, though the two first named zephyr-catchers are homogeneous, as it were, one filling both offices.



SERENA, AN AMATEUR'S BOAT FROM KEEL TO TRUCK

We had signed up our crew during the latter part of May and by the 29th of that month all hands had their dunnage aboard, besides various supplies of dry and wet goods. There was the Cap'n and owner, whose real cognomen will be found in Lloyds; an elongated, red-nosed mate; an engaged youth by the name of Burch, constantly dreaming and often profane, and last of all, "Caruse," who was "some" warbler but a damn poor sailor. Certainly, I was one of 'em; but having no title on board, I only fit in wherever occasion demands, being a cook, hit or miss deceased reckoning navigator and general all around pinch hitter.

As the first leg of our cruise happened to be a Capital Yacht Club race for yawls from Washington to Annapolis, Md., the summer headquarters of that organization, but little time was spent on the Potomac river until our return, because of ideal breezes which drove us toward the Chesapeake at an average of a little over four miles per hour. The race was scheduled to start at 6 P.M. on the evening of the 29th and we had just time enough to get our dinghy on deck before the last gun boomed the signal to cross.

Besides the Serena, there were the Freya, a Crowninshield boat of the same dimensions; the Nenemoosha, a stout amateur-built craft of some 37 feet overall length, and the Bess, a 22-foot yawl-rigged cat which, because of her many deficiencies for big water work, was given a time allowance of about eight hours.

The little fleet made a pretty start, with spinnakers and balloon jibs swelling out in the light northerly air, but before the last boat reached the forks of the channel, where the harbor and eastern and western branches of the Potomac meet, the swift ones had struck their stride and were gradually widening the distance between them and the other laggards.

When Serena's spinnaker had been set and side-lights lighted, the Cap'n mustered his crew aft (they lounged about in the cockpit most disrespectfully) and appointed watches. It was decided to stick to a "four on" and "four off" arrangement if possible, owing to the probability of making the run in about two days and because we usually figure that long shifts, when racing, give the watcher a better grip on things.

The appointment of watches completed, the port in charge of the mate, and consisting of "Caruse" and myself, took the deck at 8 P. M., just as the old city of Alexandria, Va., slid off into the fast approaching darkness astern. At 9 o'clock, the breeze lightened until the booms insisted upon swinging aboard and the ebbing tide alone swept us on toward the Chesapeake, some 90 odd miles away. The Freya could be made out downstream, still lugging both spinnaker and balloon jig, but darkness had blended the Nenemoosha and Bess into the shadows astern and we saw no more of them until the end of the race. Slowly the hours of our trick ebbed by, as slowly as we footed it seemed, and at midnight, off Craney Island, we changed places with the Cap'n's outfit below, though all three of us bluffed at sleeping and rushed on deck every time we got anywhere near the other boat. A better breeze greeted the change of watches, and at 1:30 the Cap'n whispered through the hatch that the Freya was to leeward and almost close enough to board. That's a situation intensely fascinating at night when two crews are straining every nerve to seize an advantage. A few comments were exchanged between our mate and the skipper of the other craft, who was so busy trying to figure out where the next puff would hit from that his answers were hardly intelligible.

THERE IS PLENTY OF SEA ROOM ON THE CHESAPEAKE

Suddenly the Freya started off as though the girls in Annapolis had "holt" of her tow line and the accidental jibing of our spinnaker started us on a circular course to the accompaniment of a lurid chorus of profanity. Much disgusted, I crawled into my bunk and forgot all about everything until a yell invaded the cabin: "Hey, you crabs and swabs; roust out,—you git me? Come to an' spell the deck."

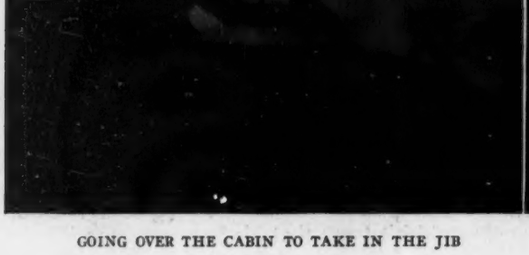
I would have rather spelled "beef steak" and "flap-jacks" or even tougher things; but it was "ours not to augufy," so out we emerged heroically into the cold. Once you became accustomed to the chill of the air, however, it was possible to take an interest in things, and we of the port watch soon discovered that the scene which lay around us was worthy of notice. The night was clear and moonlit and the wind having increased a bit, we were "slip-slapping" over the silvered ridges toward a blinking white light far ahead. Off to one side, a belated tugboat was groaning and thumping her way up-stream toward the Capital City and the broad beam of her search-light suddenly struck us full in the face and hovered there until we were blind as bats. As a result, we came up on the beacon we had been steering for, off the mouth of Chicomuxen Creek, during its short period of "dark," and when it suddenly flashed up almost under our noses more than one head of hair stood on end.

The first faint streaks of dawn seemed to draw more and more wind out of the west, and when the sun flamed up over the low Maryland hills to the left of us the breeze became a snoring, gusty Nor-wester. About 7:30 "Caruse" was ordered by the mate to get acquainted with the Jewel outfit in the galley and intermingled with clear dulcet strains of Lucia, Pagliacci, et al., the sweet odors of frying ham and potatoes soon came floating out of the companionway to hover over the cockpit for a second and then sweep to leeward with the draft off the jigger. Eight bells was sounded as Liverpool Pt. wharf was brought abeam, and all hands save the writer dropped through the hatch to breakfast. Left alone, I had an opportunity to dope out tide conditions and generally form some plan that might put us near the yawl ahead, something almost impossible when running free, beyond swinging more sail. It looked as if she was the one boat in the fleet that we would have to beat, as the other two yawls were still out of sight astern. I felt that something was surely amiss with Nenemoosha, for she was a smart sailer and two of the best men in the club were on her deck. But as for the Bess, it was not to be expected that she would save any of her time allowance. It subsequently turned out that the Nenemoosha spent about three hours on a mud bank only a few miles below Washington and that the Bess,—but her story is too good to be brought in here.

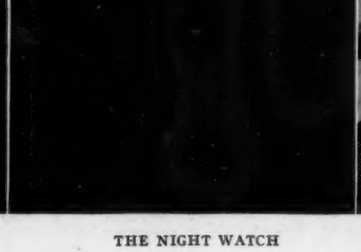
Our course toward Mathias Point light at the lower end of the Reach carried us so close to Dade's Shoal that Serena seemed to sail along on the edge of the muddy water, a cast of the lead showing 10 feet on the starboard side and no bottom at 4 fathoms to port. Though there is seldom danger of striking one of these lumps in a boat drawing four feet or less, it is best to give them a wide berth by sticking to sailing directions in the Coast Pilot. As we came up abreast of Mathias, the Freya was sighted ahead, apparently making for Colonial Beach, where it was understood that she was to drop a man ashore. That was her hard luck that she had to do so and no affair of ours, so we immediately began piling on canvas as soon as the light was rounded and course changed to East SE, and finally S ¼ E., in an effort to eat up a few of the intervening miles.

The Cap'n and his watchmates, after setting the ballooner on the port side, shook out a strange looking stays'l and draped it from the truck of the jigger mast. The misfit after jib put quite a strain on its sheet, though, and when we swept past Lower Cedar Point light, where a Government tender was standing by discharging stores, Serena was flying.

We hailed some of the crew for tidal information, but misunderstanding our request, they came back with, "Give'r hell boys; she's bustin' ther water wide open." We realized that, especially the man at the wheel, who said that he'd driven an automobile at a 70-mile clip and had ridden Western ponies, but that he'd hand it to Serena for wearing out a "guy" when running free. Soon it was time to haul to the eastward again with the winding of the river toward that quarter, and the ballooner was swung out to starboard as a spinnaker, but later shifted to port when it was found that the mainsail showed jibing tendencies. As we approached Blackistone's Island shortly after three o'clock, it was seen that we had gained quite a bit on the Freya and speculation was rife as to which boat would first round Pt. Lookout, at the



GOING OVER THE CABIN TO TAKE IN THE JIB



THE NIGHT WATCH

SLAMMING INTO 'EM

mouth of the Potomac where it empties into the Chesapeake.

The other yawl still kept her lead, though we had eaten up quite a bit of it, and at exactly 4:30 she flattened her sheets all around and stood up the Chesapeake on the port tack. Anticipating more wind after dusk we decided to put a tuck in the mainsail before rounding the point and thus have the added advantage of being prepared should our deductions prove correct. Under the circumstances (almost dead before the wind, in a small sea) reefing was child's play, and as we rounded the red can off Lookout, just 10 minutes behind Freya, Serena was ready for serious work. Here we were, after a run of 102 miles, only a few minutes behind the favorite, and, needless to say, the Cap'n was already wondering whether he'd put the cup on the parlor mantle at home or let it grace the yawl's cabin. But there's always someone around to set the teeth of that old saw about cups and lips, and the Chesapeake proceeded to make things interesting for us. I cannot say that we were surprised, for we knew the usual habits of a nor'wester on a night of a full moon, and, besides, the barometer had been slowly and steadily climbing; all of which points to fine weather—yea, very fine. Supper was hastily provided and side lights put up on the main stays, and by six bells all was trim for an all-night thrash up the Bay. The wind seemed to pick up very little until after dark, when the moon peeked out of the east and apparently sucked more and more breeze out of the northwest as it cleared the horizon and mounted upward. We were soon forced to don oilskins to keep off the solid sheets of spray that slashed over the weather side every time Serena slid into a cresting comber.

The Freya was by this time lost to view off Point No Point, six or seven miles above the mouth of the Potomac, but we saw that she was reefed before darkness shut her out. Suddenly a vicious puff slammed us down on our beam ends and I rolled the wheel down a trifle to nurse her back to her feet. Not until a quantity of water had poured into the cockpit, which is fortunately provided with scuppers, did the yawl recover, and it was seen that more sail must come off if we were to beat up the Chesapeake. So down came the mainsail until the second set of reef points lay along the boom and I held the yawl's head well up to windward while the boys laid out along the cabin top and started making the tuck fast. The Cap'n, stretched out prone on the taut mainsheet, which whipped him up and down over the water as the sail occassionally slatted and then filled, managed to secure the leach earring, and halyards were soon manned again. Just as we held off and continued our tack toward the far eastern shore an immense white four-master, apparently light, roared under our stern and passed to leeward, not 75 feet away, with every rag set and drawing like fury. It was an inspiring sight and one calculated to stir the blood of a sailor, but the December-like gale that swept a continual deluge of cold water over us as we crashed through a typical Chesapeake sea, high and short, offset any tendencies our burgundy fluid may have had to course through our veins and it became a question as to which could make the loudest noise, our teeth or the wind. We put about on starboard tack when about half-way across the Bay and stood in for the western shore to seek a possible lee under the land, but mainly to avoid the full strength of the tide, which was now ebbing. The wind seemed to increase in velocity with every puff and the seas, which I judged at the time to be at least four feet high, were mistaken several times for boats bearing down on us. A great shaggy crest would appear to windward and swoop down on us with brilliant moonlight, seemingly distorting it and making it look like anything but a hill of water to the uninitiated. Finally, I asked the Cap'n if he thought he and the mate could get the jib and jigger off without being washed overboard. He had evidently been considering the same thing and immediately crawled forward with one of the crew and prepared to muzzle the jib. The mate made the jigger halyards ready and, as the jib started, he skillfully gathered in the little spanker at the same time so that the trim of the boat would not be altered. Nothing could be of more importance when taking in sail on a yawl in such a breeze, and it is interesting to note that at nearly the same time we took in this canvas the lacing on the Freya's jigger carried away and her headsail pulled her so far off the wind that a very bad knock-down resulted, from which all hands

NENEMOOSHA, ONE OF OUR COMPETITORS

WE REEFED BEFORE LEAVING THE RIVER

AS SERENA LOOKED FROM THE SPREADERS

THE SHIP'S COMPANY AT BREAKFAST

had but little hopes of recovery. But, like the Bess, her story must come later.

Running in until we dared not go any farther, and yet finding no lee, ship was again tacked and we stook off to the eastward, passing close under the lee of Point No Point Light at 9.27. Here the mate took the wheel and the Cap'n and I went below to try to pump out some of the water which had found its way through hatches and skylight and was sloshing around in the bilges. He soon became so sick that he had to get on deck, and, fearing the same malady, I followed when I saw that further pumping was not absolutely necessary. I don't know exactly how far out into the Bay we ran, but just as the mate remarked to me that the boat was making splendid weather of it and that we would undoubtedly make the Patuxeut River, where we were sure the Freya would turn in, there was a sudden jarring sound and we gasped various exclamations of wonder and no small amount of concern. "It sounded like bottom," hoarsely remarked the Cap'n, but he suddenly remembered, as did the rest of us, that the nearest land must have been far off on either side of us and certainly not beneath the keel. "The centerboard," he yelled, grabbing the pennant to show us that it was slack and that the heavy 10-foot board was hanging vertically under the boat. The steering of the boat pointed to the same thing as Serena took the bit in her teeth and persisted in rounding up. So there was nothing to do but fall off and run for a harbor to leeward. It was disheartening to see the yawl retracing, like a thing of life, the miles of water we had fought over so hard for our windward position, and cold and nervousness alike were forgotten as we realized that the race was over so far as we were concerned; at least, we had every reason to think so then. We didn't see the Freya scud by under bare poles for harbor in the Potomac, as we laid our course for St. Jerome's Creek, where we believed we might find shelter. Neither could we know that the Nenemoosha was then running for shelter far off on the eastern shore of the Bay.

We thought that the other two yawls (we dared not hazard a guess as to the whereabouts of the frail little Bess) were to windward, and probably entering the Patuxent by this time. Just after passing in behind Point No Point light, off the mouth of St. Jerome's, a huge trap-net loomed up dead ahead and the wheel was put hard over, to bring the yawl about, though there was no time for flattening sail. Her headway, and undoubtedly her hull "effort," miraculously brought her around, however, and we skirted the wicked line of poles until the end of the pound was reached. On the Chesapeake and its tributaries, huge trap nets, some of which are staked out in five or six fathoms of water, are the bane of the small boat sailors' existence. The nets are strung on a line of heavy poles, sometimes running out far beyond the usual paths of small shipping, and, while occasionally lighted by the cheapest lamps obtainable, present an almost invisible obstruction with which a collision might be disastrous to boat, if not dangerous to life. Holding for the approximate location of the creek's mouth we drove in until well under the land. Here the breeze was shut off to some extent, but the roll coming in from outside was fearful, and just as we hauled our course to creep into the creek the deep-dragging board hit bottom. Jibing around, we got off easily enough and tried again to get in, further down. Again we hit, and so hard this time that it was fully fifteen minutes before we got clear. Then it was seen that we must either roll all night off the mouth of the inlet, with the possibility of carrying away the pin that held the board or else run to the Potomac. The latter course seemed best, as we thought we might just as well be 24 hours out of the race as four or five, and, besides, all hands were completely "done up" and in need of a good rest.

Soon we were wallowing down before the wind, with the reefed mainsail yanking us along at a comfortable pace, and it was not long before we rounded Pt. Lookout and struck a due west course, to carry us to a position off the mouth of Coan River, on the Virginia side of the Potomac.

A sail was sighted in Cornfield Harbor, just back of Pt. Lookout, as we rounded up into the river; but surmising that it was the Bess and at the same time hoping so, we gave up a fleeting idea of going in there and held our course. Through some miscalculation, we crossed a long bar after getting in the Coan, where the lead showed a depth of only six feet of water, but without scraping bottom once we ran out into the channel again and finally anchored off Lewisetta at two A.M.

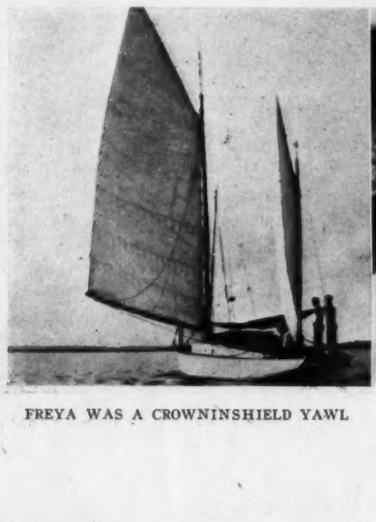
We were too exhausted and brain-muddled for want of sleep to realize that our centerboard must have been left in the sand off the mouth of St. Jerome's Creek after our second attempt to get in there, and the mainsail was dropped without further remark other than a sleepy order from the Cap'n to "give'r plenty chain."

"Saturday, May 31st. Clear, wind moderate NW. On deck at 9:30 A.M. and repair rigging after breakfast," Serena's log reads for this day, but, simple as is this note, it was noon before we had rove new main topping lifts and otherwise repaired marks of the preceding night's gale.

Meanwhile, the mate had gone over the side in his birthday clothes and had come spluttering up with the information that the board had disappeared and that he could see straight through the pin-hole in the iron keel. That explained our successful passage over the six foot shoal the night before and we didn't know whether to be relieved by the knowledge that the cause of all our trouble had disappeared or to sympathize with the Cap'n for his financial loss.

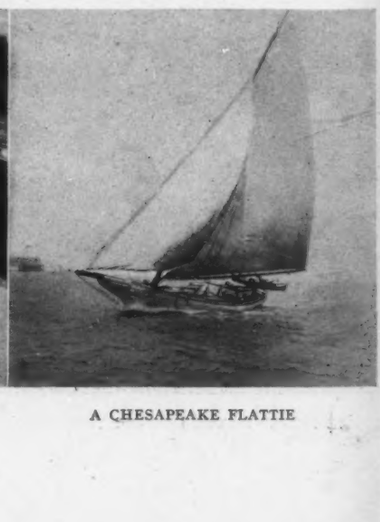
By 3:00 P. M. we had the boat in shipshape order again and were underway with the tail-end of the northwester still blowing, though now a whole sail breeze. Laying a course, E ¼ N, from Coan beacon, so as to clear the short bar off Pt. Lookout, we made a slow run across the Potomac and finally trimmed sheets for a port tack up-Bay at 5:30. The wind finally petered out and left us rolling about in a small chop of a swell abeam off Point No Point just as the sun went off watch. Here the Bay is wide enough to satisfy the cravings of any sailorman who hankers after "sea-room," from shore to shore measuring about 13½ miles, directly off No Point.

We were hoping that the barometer, which had been slowly



FREYA WAS A CROWNINSHIELD YAWL

THE CAPTAIN LAYS A COURSE



A CHESAPEAKE FLATTIE

falling since noon, from 30:06 to 29:89, was foretelling a breeze from the east or southeast, but until supper had been disposed of Serena played the "painted ship" act to perfection. At 7:30, the Cap'n squinted down-Bay and evidently caught sight of a schooner coming up with raised sheets, for he immediately got busy on the forward deck, pulling the spinnaker out of the hold. It was soon hanging from the truck in a limp and lifeless fashion, but before long a slight breath of air from astern got into its folds and, at the same time, carried out the mainsail and jigger. Gradually increasing in strength until it reached the proportions of a light breeze, it was not long before we were carrying a gurgling little wave under the forefoot.

After dishes had been washed and everything put in shipshape order for the night, a coin was tossed to decide a new order of watches and it resulted in the starboard gang taking charge until midnight. I turned in promptly at eight bells and insisted upon my watchmates following suit. This thing of loafing around on deck when off duty at night results in a goggled-eyed crew when put in charge, just at the time when they are accustomed to "hitting the tick." I reasoned that the mere auto-suggestion of crawling between sheets (yeah, we had 'em) was more apt to produce sleep than arguing and chinning with the other watch. But the unexpected stepped in and canned old "Morph."

About 10:30, "Caruse," ever singing, commenced a snore, not unlike a cross between the noise of an aeroplane engine and a boiler factory. First we turned him on his back, then put him first on the port tack and then on the starboard, but to no avail. Then some clever genius suggested fastening a monkey-wrench to his nose, from whence the horrible sounds issued, but the idea was rejected in favor of a wad of chewing gum. This was too much for "Caruse" and he started a war which lasted until we were all called on deck to relieve the Cap'n and his outfit. The tide was now flooding and the breeze, apparently encouraged by the change of current, began "picking up" little by little until we were soon reeling off the knots in power boat fashion—three or four more per hour than we were actually doing. (No offense intended to the spark-pluggers and fly-wheelers.) With a sudden shift of the wind to the eastward, the spinnaker was "doused" and broken out to port as a ballooner shortly after 2:00 A.M. Then there was nothing to do but steer and smoke and watch for other windjammers. We were boiling along in a smooth sea, and it was not long before Bloody Point's gory light at the southern end of Kent Island, was sighted.

But it was sun-up and the port watch was below decks when it was logged abeam, however, as the fickle breeze seemed to stick to business only in the mate's shift, much to the Cap'n's disgust. Light, baffling air from the same quarter greeted that worthy the minute he took charge. But "'tis an ill wind, etc.," and our enforced quietude enabled "Caruse" to serve up a belt-bustin' breakfast at 8:30.

An hour later the wind perked up a bit and within a matter of an hour or so we were off the mouth of the Severn and in sight of the Naval Academy buildings in Annapolis. There were still a few miles before us, though, and the entire crew gathered around a covey of fruit punches, the product of one Burch, and proceeded to bet on the result of the race, which we felt was about as vague as that of a long run of this kind could possibly be. Imagine our astonishment, upon rounding up into the yacht anchorage off Crabtown, to discover Nenemoosha, Freya and the little Bess, all appearing well groomed and unruffled, though on the latter craft a few bed-clothes decorated the main boom. It was to be expected that the Freya should be there, as she had best chances for the cup at the start, but Nenemoosha had beaten us, not to mention the tiny Bess.

We could see that the crews of the other boats were just as impatient to hear our story as we were to hear theirs, so as soon as our anchor was down, and mainsail furled, all hands put out in the dinghy for a "gam." Nearing the Nenemoosha, we put the question of the hour, and the answer was half resignation and half disgust. It was, "The Bess won on her time;" followed by, "What the devil happened to you fellows?"

Shades of Neptune, but we were staggered by that news! But their question was explained when the various experiences of the other crews were rehearsed. Freya, when about a mile to windward of us, during the height of the blow, split her mainsail from "ear to ear," as one of her crew expressed it, along the third reef band. She shot back down the Bay under bare poles, but managed to get up into Cornfield Harbor, at the mouth of the Potomac, under the remainder of her canvas.

(To be continued.)

George

"Don't Be Afraid to Try Making Your Own Repairs. You Can't Tell What a Good Job You Can Do Until You Have Tried."

By J. EARL CLAUSON.

DOLABRAN

GEORGE had brown eyes, brown hair, and a grease smooch on the side of his nose, which will finally result in his becoming permanently cross-eyed. Also George was engineer on the Dolabran, length over all twenty-seven feet two inches; on the water line twenty-five—the Dolabran's dimensions, not George's.

Not that the color of George's eyes and hair, or even the grease smooch on the side of his nose, have anything to do with the plot. They are mentioned merely by way of easy, graceful introduction, in order, as it were, that the presentation of George in all of his wonderful totality may not unduly dazzle the reader. And the point of introducing George at all lies in his possession of an axiom which any motor boat operator might well take to heart, and the manner in which George applied it.

The engineer's universally valuable rule ran as follows:

"Don't be afraid to try making your own repairs. You can't tell what a good job you can do until you have tried."

There were three of us on the Dolabran, although in view of her dimensions it might almost seem that an engineer was a superfluous luxury. Conditions, however, made it otherwise. We were off for a week's cruise of not far from 400 miles; so far as mechanical knowledge went, I was excess baggage, although I claim I can dish up canned goods with the best of them, to say nothing of dropping and hauling the anchor; and the owner, while he knew more about the theory of electricity and engine construction than the man who built our motor, admitted a bent for experiment which required a curb bit. George was the curb. He was fond of cruising, willing to curl up for a night's sleep beside the engine cover in the cockpit while his shipmates reposed in the cabin, and what he lacked in theoretical knowledge of why the wheels go round he more than made up in ability to get results. In addition he had his axiom.

George was of English birth, and notwithstanding that he had emigrated to the land of the free in search of fortune at the downy age of six, betrayed now and again his nativity by some unexpected twist of speech. Most of all was his nationality revealed, however, by the singleness of purpose with which he stuck

DON'T BE AFRAID OF MAKING YOUR OWN REPAIRS. YOU CAN'T TELL WHAT A GOOD JOB YOU CAN DO UNTIL YOU TRY

to a job until it was completed. A bulldog with a death grip on an intimate friend was nothing to him. When anything happened George made it his business straightway to set it right, and meal time might come and go, constellations might dip and disappear below the horizon, nations rise, flourish and totter to their ruin — the end of all things would find George at his job if it proved thus stubborn. With all possible veneration for the owner, I sorely misdoubt we should have covered more than a quarter of our route but for George's willingness to sleep in the cockpit.

But, like all gas engine experts, he had a hobby. The man who, his life line running parallel with that of a "petrol motor," as our English friends have it, does not develop a hobby is probably too sane to be successful. At any rate, you seldom encounter such solid mentalities. With one it will be the carburetor; if the engine skips, backfires, lies down or does any one of the thousand other tricks a gas engine is capable of, something is wrong with the carburetor. It must be adjusted, and readjusted, and re-readjusted. After that it becomes necessary to buy a new one, the other having been constructed on entirely wrong principles. The carburetor hobby is an expensive one, but the pleasure it affords those who ride it is apparently worth the money, for I have yet to hear one complain except of the squashy brains which invented the discarded appliances.

Another man seeks to obtain perfection of operation by manipulation of the timer. Myself, I confess to a fondness for overhauling the wiring. But this is rational, for without perfect ignition you cannot have perfect running. I leave it to anyone.

George's weak spot was spark plugs. We had a three-cylinder engine, developing eighteen to twenty-four horse-power when the developing was good, and George considered that day lost when he had not removed, emery-papered, twisted and replaced each of the three spark plugs at least twelve times. He was the only man I ever saw who removed and replaced a spark plug while the engine was running. Had he not possessed this knack I apprehend we should have been laying to most of the time, for he simply could not resist the lure of those little rods of porcelain.

There are probably plenty who know that a spark plug can be taken out of a multiple cylinder engine and put back while the boat is under way, but for the benefit of those whose advantages, like my own, have been limited, I may be permitted to explain the process. First, George threw off the switch of the cylinder on which he wanted to operate. Then he opened the cylinder pet cock. This divided the force of the compression between the spark plug hole and the pet cock. Having taken these precautions, he started the plug with a monkey wrench and, carefully covering it with his palm so that it could not be thrown up into the air and overboard when the last threads let go, unscrewed it.

Getting it back again was more difficult, the compression having a tendency to unseat the plug before the threads caught. Then George's English blood would rise, he would clutch the plug in a grip of steel, and after a brief tussle the "cussedness" of the inanimate object would give way before the determination of the engineer, and it would sink to its place with the proper air of resignation, after which George would turn his attention to another spark plug.

We had been *en route* three days when I witnessed the first important application of George's axiom, a curtain-raiser to one still more striking. It was late afternoon, and we were moving slowly toward shore in a Connecticut harbor looking for an anchorage. Suddenly there came a bump and the engine stopped dead.

Each of us stared at the others, and two of us asked:

"What's that?"

The third, our practical engineer, worded the fear in our hearts.

"We struck something," said he. "Let's see if she'll turn over."

"She"—the engine—would not. The wheel, after describing an arc of fifty degrees, would go no farther. The rudder did not swing. By an exercise of cold logic unusual in an emergency we concluded that a propeller blade had been jammed against the steering fin—which meant that we were shipwrecked. A stiff northwest breeze tended to blow us out in the Sound, so we dropped anchor and made ready to take account of stock.

As a preliminary, I went over the stern and diagnosed our injury. I found one of the propeller blades so badly bent that it struck the rudder post and overlapped it a good three inches. Another was jammed along its edges. The third was intact. I clambered back and reported.

"It's a marine railway for ours," I hazarded, "if there is such a thing around here."

The captain's face betrayed his troubled mind. Only George appeared serene.

"Let's find out if there's a soft beach anywhere near," said he.

Presently a fishing boat hove within hailing distance, whose owner agreed to tow us to such a beach as George spoke of. By the greatest of luck it was high tide. Eager-faced summer resorters gathered on the strand as we drew near, anticipatively demanding to know whether her "bottom was all tore out." We learned that we had discovered a stone jetty, submerged at high tide, which is the standing marine joke of this particular harbor. When the resorters heard that her bottom was apparently intact they dispersed to their homes and evening meals.

Under George's guidance the Dolabran nosed her way as far up on the beach as the tide would carry her and lay down to rest. The owner asked George what he thought he was going to do.

"Straighten the propeller," the engineer replied.

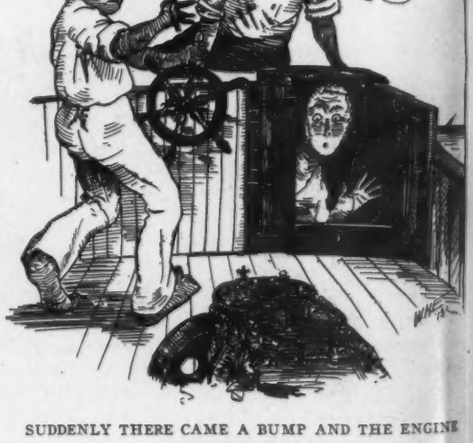
"You can't get it off," said the owner.

"Why not?" demanded George.

"Because the last time she was in shop they tried to move the pin that holds the nut and couldn't budge it."

"Let's try," said George. "You don't know what a good job you can do until you've tried."

We rustled around and found some timbers, with which the Dolabran was chocked up to an approximately erect position. Then there was nothing to do but wait for the receding tide to uncover the propeller. It was eleven o'clock at



SUDDENLY THERE CAME A BUMP AND THE ENGINE STOPPED DEAD

BEWILDERING THE NATIVES BY THE EASE WITH WHICH WE MOVED THROUGH THE WATER WITHOUT VISIBLE MEANS OF PROPULSION

I HAVE KNOWN EASIER KINDS OF STEMMING. FOUR MILES OF IT, I FELT SURE, WOULD PALL ON ME

night when, by the light of the lantern, George attacked the pin which had proved refractory in shop. Strange to say, it came out as though it had been greased. Perhaps our impact with the jetty had led it to change its mind. After that, removing the wheel was equally easy. At midnight George was pounding Tobin bronze with a claw hammer on a flat stone of the sea wall which backed up the beach.

By one o'clock the bent blades were straightened and the wheel was back in place. At eight o'clock the next morning we left the harbor (having floated free at flood tide) ahead of all the rest of the yacht club fleet we cruised with. And that day we made a half mile an hour better than before the accident, and the engine turned up thirty more revolutions to the minute.

Truly, "you can't tell what a good job you can do until you have tried."

By virtue of George's activity with the spark plugs we found ourselves at Port Jefferson two days later. As the good ship Dolabran—I could suggest several improvements in her, but everything that floats is "good ship" in the parlance of the amateur seaman—as the good ship poked her nose through the breakwater and dropped anchor at the front door of the village I felt no premonition that the wooded hills which looked down on us had been destined to witness George's crowning application of his favorite axiom.

Among the Dolabran's equipment was a motor built for attaching to the stern of a skiff, thereby saving the industrious yachtsman the labor of rowing. From the outset I had entertained dark suspicions of that motor's trustworthiness. It looked too good to be true. One or two experiences on previous occasions had nourished the seeds of doubt. To sum them up, when the motor once started it seeemed to want to keep going as long as the gasolene held out, but the effort of getting it started was fully the equivalent of rowing once and a half times to one's destination and back.

Leaving the engine out on the home dock for a week before the cruise, unprotected from the elements, had not benefited it at all. It was a frail, consumptive looking motor, which should have received tender care. It had a hollow cough, the sound of which I did not at all like, and the hectic flush of rust appeared here and there.

But nothing would satisfy the captain except attaching the motor to the Dolabran skiff and setting forth on a tour of exploration of Port Jefferson harbor "and environs," as the railroad advertisements put it. The motor was affixed, therefore, and after the usual coaxing settled down to business.

I can recommend Port Jefferson to those who have never visited it. Others need no recommendation. It is a fascinating spot. Its landlocked waterway affords ample and beautiful anchorage, and off to one side are various extensions and ramifications ideal for exploration with a skiff. We threaded our way in and out among the shoals, where protected clams nurse their young, until our weedless propeller became entangled in the eel grass, and a low, scraping sound indicated that, light draft though we were, we needed more than a heavy dew to float us; we headed up the pond to Setauket, bewildering the natives by the ease with which we moved through the water without visible means of propulsion; we passed under the bridge, exhibited ourselves to a wide-eyed lobsterman on the "Jolly Polly," and then turned homeward. And just outside the bridge, four miles from the Dolabran—it could hardly have been less—the engine quit.

Did I say that a strong tide was setting against us? But every yachtsman knows it was. And George, the persistent, the ingenious, the careless, had forgotten to bring along a tool chest. The only weapon he could muster was a monkey wrench.

What had happened to the engine was at first a mystery. Off came the spark plug, and it developed that there was plenty of juice. The gasolene tank was nearly full, and the carburetor was getting its share. The engine turned over without difficulty—there was no binding. Having satisfied himself on these points, George calmly picked up a piece of metal from the stern with the remark:

"Here's your trouble."

The little strip of metal, half an inch wide by two inches or so long, was nothing more important than the vibrator, without which the current could not be delivered to the cylinder. It had snapped off short. The piece George found was about two-thirds of the whole. The remainder was still attached.

"If I could get that screw off that holds this other piece I might fix this up to run," said George. "Have you got a screwdriver?"

We hadn't. He worked vainly with his knife at the screw, which some honest workman had set into place to stay.

"If I had a piece of tin——" he said finally.

We hadn't any pieces of tin.

"Or an elastic band."

Not even an elastic band.

I was already at the oars stemming the tide. I have known easier kinds of stemming. Four miles of it, I felt sure, would pall on me. But with a vibrator gone, what can one do?

Even were George able to start the refractory screw I failed to see that he would be in better case than before, for to attach the end he held in his hand it would be necessary to drill a hole through it, and at that the platinum point would not be in contact. The symptoms seemed to indicate a well-equipped machine shop.

Still, I did not tell George my forebodings. He seemed so young and hopeful as he fished through his pockets seeking, I supposed, an empty tomato can, or a foot lathe, or any other trifle which might come in handy. He found neither of the articles mentioned. The sum total of his haul was an end of cotton twine and a brass terminal, which he had intended to try out on one of his spark plugs on the Dolabran.

He looked at this treasure doubtfully and then, from mere force of habit, seized the wrench and removed the spark plug. As absently he set it back where it belonged. I meanwhile continued to stem the tide.

Presently I caught George examining the brass terminal as though he suspected it of being responsible for our trouble. Then, employing the monkey wrench as a hammer, he attacked it savagely, hammering the collar of it flat until it held the end of the broken vibrator in a more or less stable grip.

"What you doing, George?" asked the captain.

"Oh, I'm just—I wish I had a screwdriver," replied the engineer noncommittally.

He dropped to his knees and began tinkering with the place from which the vibrator had broken away. Then he got busy

(Continued on Page 108.)

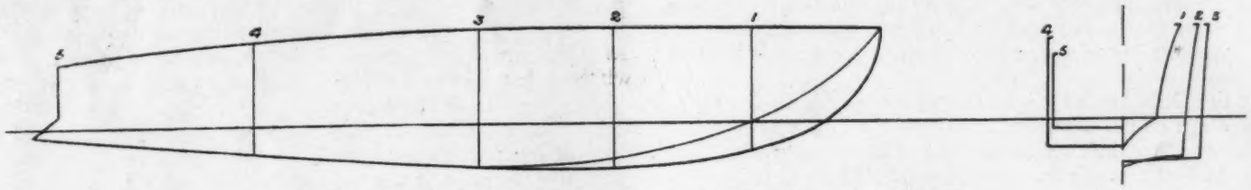
The Pounding of Hydroplanes

What the Slapping of the Waves and the Jumping from Sea to Sea Mean in Figures on the Hull of a Speedboat. The Necessity for Extremely Strong Construction.

By COURTESY OF "THE YACHTSMAN" (London).

When the early, punt-like Ricochet hydroplanes were introduced, some years ago, it was found that the effect of driving them in rough water was disastrous to the structure, and that the hulls tended to smash up by reason of the pounding when jumping from sea to sea. The Fauber multi-step hydroplane suffers far less from this trouble, as the cross section is not quite flat anywhere, and only relatively so right aft. The bow sections are of an easy V form, so that, as the boat drops into a sea, the water is parted more or less gradually and easily. The Thornycroft-type hydroplane, too, has a bow calculated to part the water easily, but we believe these pound rather more than the Fauber, though, of course, not nearly as badly as the flat, or almost flat-bottomed ones.

The French have developed a type of boat known by the name of "stepless hydroplane," there being two general designs of these. Most of them have double V fore-body sections, with some hollow, and chines swept steeply up to somewhere near the point of the stem, the section from a few feet forward of amidships, aft, being perfectly flat with vertical sides. The Tellier-built boats Na Roch and J'en Veux are like this, while the same builder's Vonna (an International candidate) and Sunbeam are very similar, except for the presence of a single step amidships. The Despujols boats, Socram I. and Sigma IV., are not unlike the Telliers in section, but are drawn-in aft, while Santos-Despujols is a single-step hydroplane with a round bilge right through. Minnehaha II. has a rockered up bow of round V section (all the others being hollow) and perfectly flat bottom with a distinct angle between bottom and fore-body. The sketch gives some idea of the typical sections of a French boat, Fig. 1 showing a Tellier hull, such as J'en Veux, roughly drawn from memory.



TYPICAL SECTION OF FRENCH STEPLESS HYDROPLANE AND V SECTIONS FORWARD

Imagine, now, one of these boats travelling at high speed in rough water, so that she occasionally jumps from the top of one sea to that of the next. Or, rather, what usually happens is that the boat is travelling and is suddenly left unsupported by the sea, coming on to the next with a big "flop." When a boat jumps she does not often get right out of the water by her own effort; she is left in the air by a wave dropping away from under her. She then continues to travel by the force of her momentum, almost always comes to a more or less even keel, and strikes the next sea nearly horizontal, but with a list to port or starboard, according as to whether the engine be left or right handed. This listing is very noticeable, and is caused by the removal of the torque of the engine when the propeller clears the water. If the jump is only partial, so that the propeller remains immersed, there is no listing, but on a complete jump clear of the water, most boats list from 10 to 20 degrees and land on the bilge.

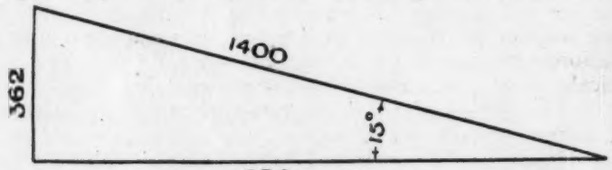
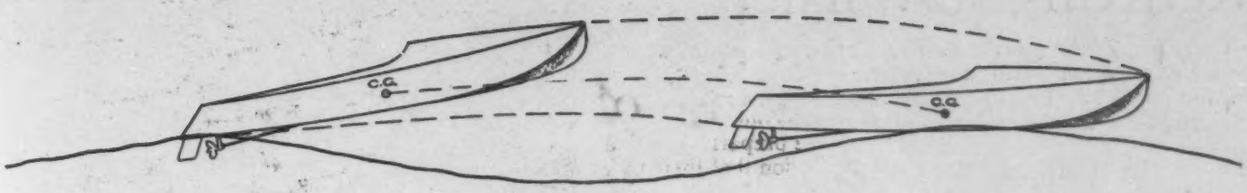


FIG. 2

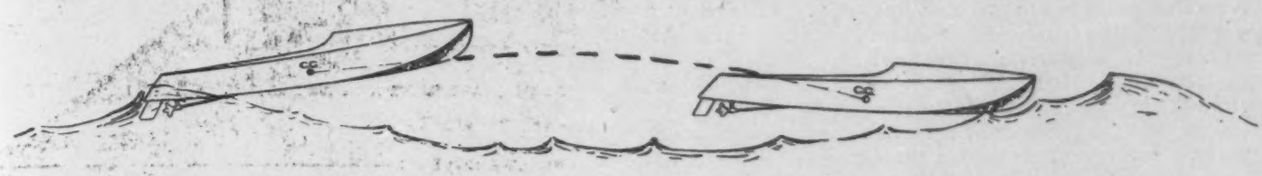
It may not be generally known, but the power of the engine is divided into several components, of which the chief are thrust ahead, lift upwards (due to shaft rake), and tendency to capsize. If a propeller had its blades quite flat and set fore and aft, there would be no thrust, and all the power would tend to capsize the boat. On the other hand, if the blades were flat and set athwartships, again there would be no thrust, but a small capsizing tendency due to the friction of the water on the blades and to the disturbance caused by their thickness. In practice there is a torque due to friction and to the proportion of pitch angle and revolutions to speed, or proportionate to the slip. In big-powered single screw boats the torque is considerable, and engines are frequently placed out of the centre to allow for it. For instance, all the Despujols' boats at Monaco had their motors and propellers several inches to one side. In twin-screw boats the trouble is overcome by running the two engines different ways, with right and left handed propellers respectively. When a comparatively slow boat is being over-driven in rough water she is apt to rear up on end when climbing a sea, and will then drop down into the next sea or hollow without jumping out of water at all. This is totally different to the jumping of a hydroplane or fast boat, as the same thing can even be seen with a floating spar or a boat at moorings.

It can readily be imagined that the destructive force of leaps out of water such as we have described must be enormous, and that it is practically impossible to calculate exactly what stresses will be imposed on the structure. It is, however, possible to figure out the approximate loads caused by jumps under certain supposititious conditions such as may occur in practice, and it will be interesting to see what these are likely to amount to. In everyday work, the builders have simply gone on strengthening their hulls until they find they will stand up to the work, but even now they are not quite immune from damage, and some of the boats at Monaco showed unmistakable signs of the rough treatment to which they had been subjected in one or two races.

Let us assume the case of a 30-foot boat or hydroplane, practically flat-bottomed except for the usual V forebody, speed 35 knots, 250 b. h. p., displacement 2600 lbs. We will imagine that this boat will occasionally jump 40 feet, from the crest of one sea to that of the next. (We have seen them jump more than this, but not often.) Now, when this boat is at rest, her weight will be supported by the entire area of the bottom, say about 110 square feet, which will be equal to a loading of about 24 lbs. per square foot. When she is travelling, her weight will be supported in part by the propeller thrust (the vertical component of it), and in part by the reduced bottom surface on which she is planing. Taking the propulsive efficiency to be 60 per cent, the propeller thrust should be:—



COURSE OF A 30-FOOT BOAT AS SHE JUMPS CLEAR OF THE WATER AND LANDS ON THE NEXT SEA



LEAP OF A 30-FOOT BOAT IN A SHORT SEA WHERE THE SHAPE OF THE SECTIONS IS OF GREAT IMPORTANCE

$$\frac{250 \text{ (b.h.p.)} \times 33000 \text{ (ft. lb.)} \times 60}{35 \text{ (knots)} \times 101{:}33 \text{ (ft. per min.)} \times 100} = 1400 \text{ lbs.}$$

The shaft rake will probably be about 7 degrees, and the boat will be trimming 7 or 8 degrees by the stern, so that the thrust will be at about 15 degrees with the horizontal. The vertical and horizontal components of thrust may be measured conveniently from a triangle of forces, as in Fig. 2. The total thrust is laid off to any convenient scale along a line drawn parallel to its direction; the vertical line will then give (to same scale) the vertical force which is tending to lift the boat, and the horizontal line will give the thrust actually shoving the boat ahead. Alternatively, the amounts can be calculated thus:—

Vertical component = sin 15°×1400=.2588×1400= 362 lbs.
Horizontal " = cos 15°×1400=.9659×1400=1350 lbs.

We must estimate the amount of surface on which the boat will be running when at speed, and this will vary considerably from moment to moment, according to the state of the sea. And a hydroplane with a step or steps will be running on much less surface than one without steps. We will assume (and will probably be somewhere near correct) that the effective supporting surface at speed is one-third of that when at rest, or say 37 sq. ft., which will give a loading of:—

$$\frac{2600-362}{37} = 60{\cdot}5 \text{ lbs. per sq. ft.}$$

In the case of a stepped hydroplane the loading will be much more intense, as she would probably be running on no more than about 20 sq. ft. at most—say 112 lbs. per sq. ft., or even on less surface than that at times. Now all this is for smooth water; in rough water things are very different.

The worst condition of sea for leaping seems to be that of a fairly easy swell that has a tendency to curl over at the top—a condition frequently met with in the bay at Monaco, but not seen so often in our waters. The peculiarly steep formation of the rocky shores there would appear to bring about an unusual state of sea, and it is noticeable that the seas cannot be timed so certainly as in most places. This curling swell has a tendency at times to lift a boat right up and then leave her so that she is entirely unsupported until she drops on the next swell or until the next swell rises to meet her—which is what happens as a rule. We have endeavored to sketch the progress of one of these leaps, showing the boat in the successive positions of just leaving the water and just hitting it again. In the majority of instances a boat will land right on the flat of her bottom, and the V-ing of the bow sections seems to be of little value in easing the force of the bump. But in some cases a boat will pitch more on to her nose, when the shape of the fore-body becomes of the greatest importance. Where the bow sections are most important is in running in a short sea—one in which there is no chance for proper planing, and no risk of leaping right out.

In Fig. 3 is shown our 30-foot boat as she would be when just about to jump clear of the water, and when she has just struck it again, the path of flight being a gentle curve, and the trim of the boat gradually changing during the leap. This is drawn from notes taken when watching boats making these leaps, and indicates very fairly a typical case. It will be seen at once that the shape of the fore-body makes no difference in this case, but the next figure (4) shows a leap where the bow sections become of great importance, as a flat bow would mean a staggering blow. The little 21-footers, like other boats that are fast, yet not too fast, for their dimensions, sometimes jump almost entirely out of water, but they always seem to do it in a quiet and lady-like manner, dropping their bows down first, and picking up nicely on their well-formed fore-bodies. They do not seem to do the desperate leaps that the larger foreign boats do, although many of the latter are slower in proportion to dimensions.

Returning to Fig. 3, in which the boat has just jumped 40 feet (the height of the swell is rather exaggerated) and landed level, it will be seen that the pressure on the bottom must be enormous, as the bump all comes on quite a small surface. Water struck under such conditions as these is practically unyielding, so that almost the entire blow will be taken by a few square feet, say 20 sq. ft. amidships. The blow will be a slanting one, with the whole weight of the boat and crew behind it, and the speed of impact will be that due to the speed of the boat and the accelerating force due to the pull of gravity acting during the time taken by the boat's traveling 40 feet. The unknown quantity is the retarding force of the air or wind resistance, and this upsets exact calculations of velocity due to gravity and momentum. The speed of 35 knots is equal to 59 feet per second, and the duration of a 40-foot leap will be about .7 sec. In theory, the speed on striking the water will be about 58·6 feet per sec., but we assume this as 55 feet per sec., to allow for air resistance. Consequently, the boat will have energy equal to:—

2,600 (lbs.) × 55 (ft. per sec.) = 143,000 ft. lbs. per sec.

The direction of motion on striking the water will be tangent to the flight path of the centre of gravity, and this may be taken as 15 degrees to the horizontal and the mean water surface. The triangle of forces (Fig. 5) shows the vertical component of the striking force, which is trying to smash in the bottom of the boat,

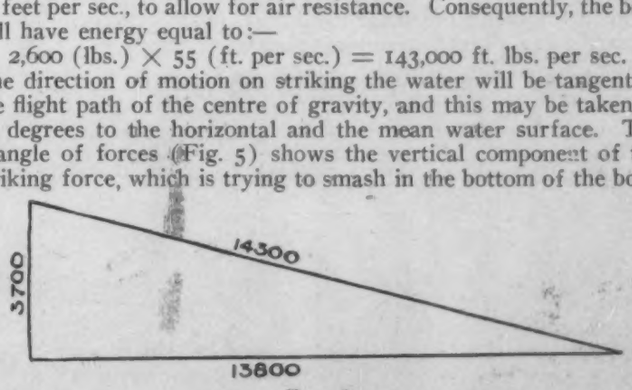


FIG. 5

and the amount of energy left in the travelling boat after her leap. These forces can be calculated thus:—

Vertical component=sin 15°×143,000= ·2588×143,000=3,700 ft. lbs. per sec.
Horizontal " = cos 15°×143,000= ·9659×143,000=13,800 ft. lbs. per sec.

Now, the work done on the bottom of the boat is done in a good

(Continued on page 108)

Refitting a Whaler

How the Old-Time Blubber Hunters Are Coppered and Calked After a Long Voyage—Old and Modern Methods of Fitting Out—The Cry of "There She Bl-o-o-ws; Ah Bl-o-o-ws" Still Heard on Many Seas.

By JOHN ALLEN CHASE.

IF most yacht owners could spend a few days about the wharves of New Bedford when the whale ships are preparing for sea they would doubtlessly come to the conclusion that their task of fitting out is extremely trivial in comparison.

Though the call, "There she blo-o-o-ws, ah blo-o-ws!" as shouted from the masthead by the lookout when he spies the filmy vapor that betokens the presence of the whale, no longer lures our youths to run away from home for a three or four years' cruise upon a "spouter," as of old, the whaling industry is being pursued to-day with greater vigor than is generally realized.

Last August two square-rigged old windjammers, the barks *Morning Star* and *Grey Hound*, arrived in New Bedford on the same day—something which had not happened before in a number of years. Recently the writer counted more square-riggers in the same port—all of which were whalers—than could be seen along the whole water front of New York. In addition to these square-riggers there were several two-masted schooners and one three-master. The latter are a new type of craft in the industry and at present there are but two—the *Arthur V. S. Woodruff* and the *Mystic*.

It is now no unusual sight to see the wharves crowded with casks of oil from the different craft, just as in the old days, and men are busy coopering "empties" for outgoing vessels. Double-end whaleboats—perfectly modeled beauties thirty feet in length—often lie thick about the old boathouse on Clark's Point. Here and there through the lot may be seen some badly stove, showing where the mighty flukes of a whale have smashed down upon them, splintering the wood to kindling.

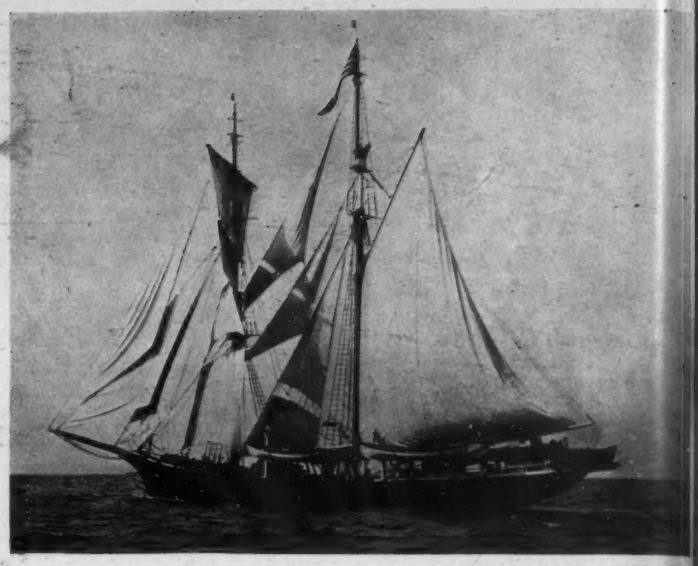
Over and above all sounds the ring and click of calking mallets and coppering hammers. And not the least picturesque and interesting part of the whaling industry as seen by the landlubber is this coppering and calking.

Down off Dumpling Rock lighthouse, in Buzzard's Bay, a blubber hunter is seen wallowing slowly along nearing port after her long sojourn upon the seven seas in pursuit of the mighty cetacean. She is a "full" ship, as evidenced by her being low in the water. A pilot boards her, a fussy tug races out to meet her, she is towed into the harbor and moored to the dock,

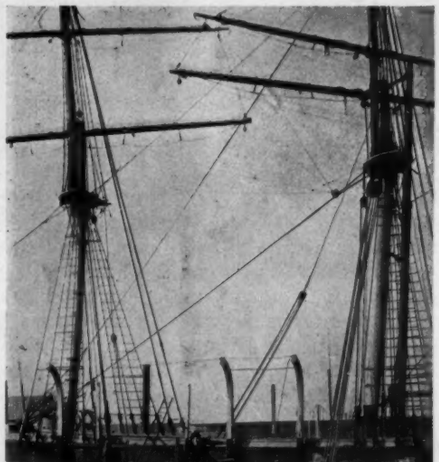
Soon her hatches are lifted and the "catch," in great casks containing from 200 to 400 gallons each, is hoisted out. As the discharge continues and the greasy old hulk rises in the water, patches of a fine, long, hair-like growth of light green sea grass, waving and undulating back and forth to the sluggish rolling of the ship and the lapping of small ripples, comes into view.

In places the copper on the hull has been eaten away by the action of the salt water and the chaffing of the whale alongside during the cutting in. Barnacles, sometimes of an unbelievable size, are found adhering to the bottom. In marine parlance she is foul—very foul.

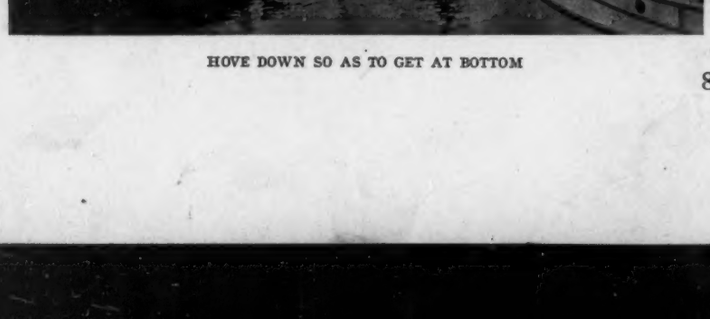
She needs to be hauled out upon the ways for a general overhauling. There is coppering to be done, and calking.



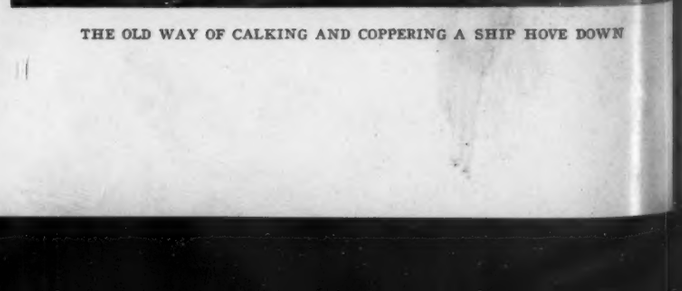
OFF FOR THE WHALING GROUNDS. VIOLA, THE LATEST VESSEL BUILT IN THIS COUNTRY FOR WHALING



PREPARING TO CAREEN SHIP FOR RECALKING BY TACKLES FROM MASTHEAD TO CAPSTAN ON DOCK



HOVE DOWN SO AS TO GET AT BOTTOM



THE OLD WAY OF CALKING AND COPPERING A SHIP HOVE DOWN

WHALING BARK WANDERER ON THE WAYS FOR RECOPPERING

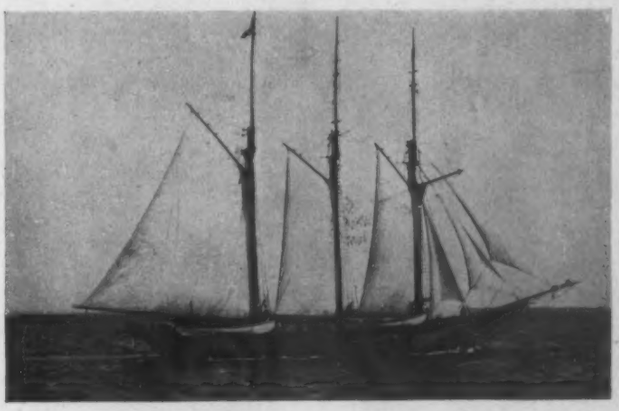
BARE TO THE SKIN. HULL READY FOR CALKING, SHEATHING AND COPPERING

BARK MORNING STAR, SHOWING COPPER WORN AWAY AT WATERLINE DURING A LONG VOYAGE

Thin sheets of copper, about four feet long and 18 inches wide, overlapping each other, cover the ship's bottom from her keel up to her loaded water line. These sheets are not nailed directly upon the heavy planking of the bottom, but to this is first tacked a layer of felt or spread a coating of pitch. Over this is nailed a sheathing of soft pine boards about ¾ inch in thickness. To this the copper is fastened.

The sheathing and felt or pitch are for a threefold purpose. First, the skin is not subject to the wear and tear of the periodical nailing on of new copper and ripping off of old. Again, the felt and sheathing form a practically waterproof surface, helping to make the ship water tight.

But the real purpose is to stop the ravages of the teredo, a marine worm which attacks the woodwork of vessels. These tiny worms, less than an inch in length, create havoc once they get into a ship's timbers, boring them full of holes and leaving but a mere powdery shell of a once solid piece of wood.



WHALING SCHOONER ARTHUR V. S. WOODRUFF, ONE OF THE FEW VESSELS OF THIS TYPE IN THE WHALING INDUSTRY

Starbuck's History of the American Whale Fishery gives an account of the ship *Minerva II*, of New Bedford, Captain Swan, master, which while cruising in the Pacific in 1857 touched a reef, but so lightly that neither officers nor crew gave it a second thought. Some few months later, during a gale, the ship sprang a leak. The water gained steadily despite ceaseless work at the pumps. The forehold was cleared and several holes were found in the bottom, through which the sea was rushing furiously. The holes were plugged and covered. Finally when the ship reached Sydney and was hauled out it was found that the copper had been scraped off the bottom, presumably at the time the ship touched upon the reef. The worms had got in and the planking was honeycombed with their holes. There are many other instances such as this, and the loss of some ships that have sailed away and never returned has been attributed to the deadly work of the teredo.

The worm bores its way through the outside planking until within a paper thickness—or thinness—of the inner side. Here it stops, for it never goes quite through a plank.

When the ship goes upon the railway for recoppering the old sheets are stripped off, such as seem to warrant it are sent to be resmelted and the remainder go to the junk heap.

Calking, in these days when iron and steel are so rapidly supplanting woodwork in all shipbuilding, is another declining indus-

(Continued on page 108)

CALKING THE TOPSIDES

JUST ARRIVED—DRYING SAILS

"THE WHARVES ARE CROWDED WITH CASKS OF OIL"

ANKLE DEEP AT HUNTINGTON BAY. IN THE TRIAL RACES SHE MADE THE BEST SHOWING OF ANY OF THE CONTESTANTS

PETER PAN V IN THE TRIAL RACES AT HUNTINGTON BAY. SHE PROBABLY WILL BE ONE OF THE AMERICAN TEAM OF B. I. T. CHALLENGERS

The Month in Yachting

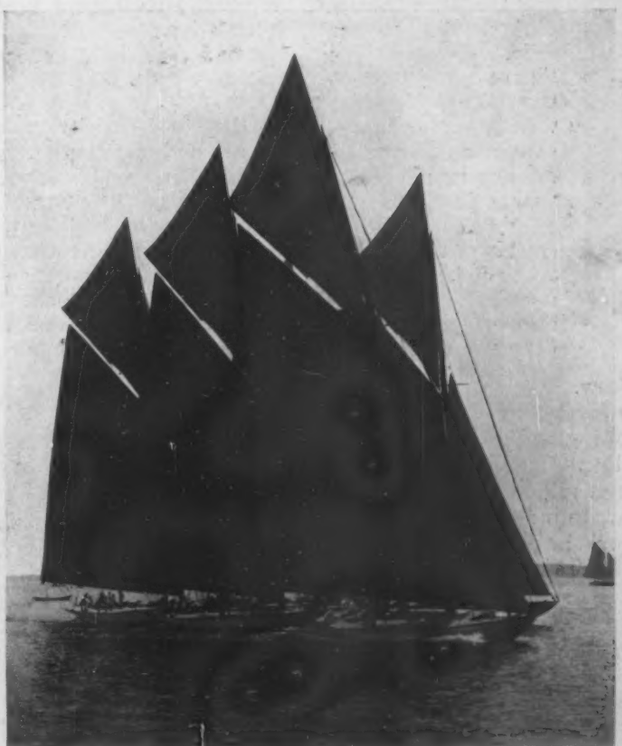
Selecting a Team to Go After the British International Trophy

IT is a good thing for whatever chances we may have to win back the British International Trophy that the Motor Boat Club of America did not hold the prospective competitors in the so-called trial races to select a team to go abroad down to the published conditions and fixed dates, otherwise it is doubtful if we should have had any team at all to send across the big water.

It was the same old story at Huntington Bay July 7, 8, 9—the same old fiasco—and as far as those three particular days went toward proving which were the fastest and most reliable boats of the many entered, the sun might just as well never have risen on them. With almost a year to prepare in, it might be supposed that most of the boats built and entered for this event would at least be ready on time when the judges called the first race; but of a dozen or more boats with conversational speeds of 50 miles up, only two were really ready to run and at the line.

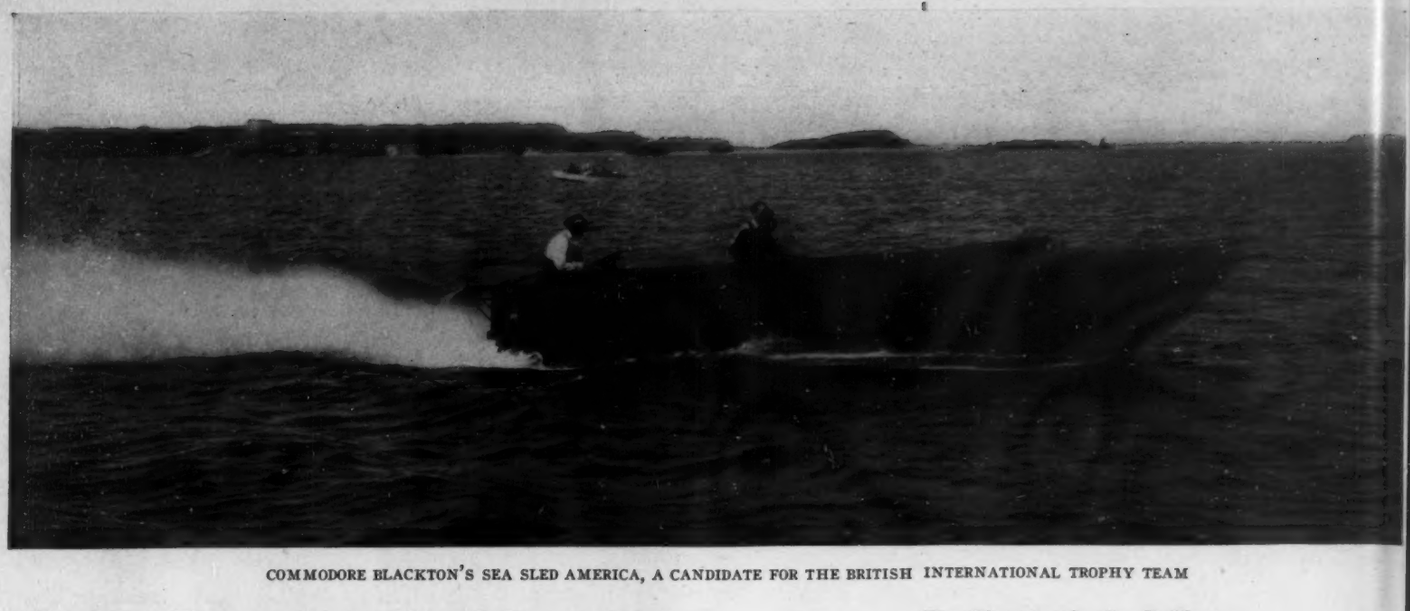
July 7, 8 and 9 were set as the days in which to hold these trial races and on the first day only one boat put in an appearance, James Simpson's old reliable 20-footer, Peter Pan V, the boat which held such promise last year and which did not seem to get a fair deal at that time. She has undergone some changes since last year, though in looks she is practically the same. There was a strong northwest wind blowing and a heavy sea running out in the bay that had misplaced some of the buoys of the five-mile triangular course. Peter Pan, however, was sent over the course and made one round, much of the time being consumed in looking for the buoys, so that her time was slow.

On the second day three boats showed up, Speed Demon Reliance, Commodore Blackton's hydroplane, about which a great deal has been heard; America, a Hickman "sea sled," and Peter Pan V. These three boats were sent around a 30-mile course, Speed Demon Reliance being the only one to go the entire distance, which she made in 50 minutes 43 seconds, or an average of 35.64 knots, or 40.98 statute miles. The average time, however, was not a fair test of her actual speed, as she made the first two rounds of five miles each in approximately 7 minutes 58 seconds, while on her last round she slowed up and took 10 minutes 13 seconds for the five miles. Peter Pan V ran very consistently for four rounds, when she cracked a water jacket on one cylinder and was forced to quit. The America ran two rounds in the slow time of 9 minutes and some seconds, when she quit, owing to magneto trouble.



FIVE OF THE FIFTY-FOOTERS SO CLOSELY BUNCHED AT THE START THAT A MAN MIGHT STEP FROM ONE TO THE OTHER OF THEM

The third day saw three boats out, Peter Pan V, America and Count Mankowski's Ankle Deep (her first appearance during the trial races). A stiff southwester made Huntington Bay anything but an ideal place in which to run 20-foot speed boats, but it was decided to send the boats around the course and see what they could do. Commodore Blackton announced that he had withdrawn Speed Demon Reliance, as her engines, which were not those originally intended for her, had been taken out, and that he would pin his hopes in the "sea sled" America. The latter, however, was having engine trouble, and the mechanics could not get her ready in time to start. Finally Peter Pan V and Ankle Deep were sent away. Ankle Deep showed the fastest time that had yet been seen, doing the first round in 7 minutes 50 seconds, and the second in 7 minutes 49 seconds, or at the rate of 38.29 knots, or 44.1



COMMODORE BLACKTON'S SEA SLED AMERICA, A CANDIDATE FOR THE BRITISH INTERNATIONAL TROPHY TEAM

statute miles. These rounds were eight and nine seconds better than Speed Demon Reliance had made the previous day. Peter Pan made the first round in 8 minutes 54 seconds, doing well in the rough water, but on the second round her magneto was drowned out by the water and she had to quit.

THE THREE OWNERS WHO HAVE DONE MOST TO RECOVER THE CUP. LEFT TO RIGHT: JAMES SIMPSON, COM. J. STUART BLACKTON, C. S. MANKOWSKI

These three days officially completed the trial races, but the committee decided to give them another day, so as to give the late comers a chance. But on the fourth day only the same three boats showed up. America was again a disappointment, completing one round of the course in 9 minutes 42 seconds, then cracking two cylinders and being forced to quit. Peter Pan V also cracked a cylinder and, having no other competitors, Ankle Deep withdrew.

At this stage of the proceedings the committee decided to hold future trials the following week and tried to get more boats at the line. Ankle Deep is undoubtedly the fastest and most reliable boat that has so far showed up, if we are to judge by her performance during the trials, and she will undoubtedly be chosen as one of the team if her owner, Count Mankowski, can be induced to send her abroad. He is, however, desirous of going after the Gold Challenge Cup, races for which are held early in August. Peter Pan V will probably also be chosen.

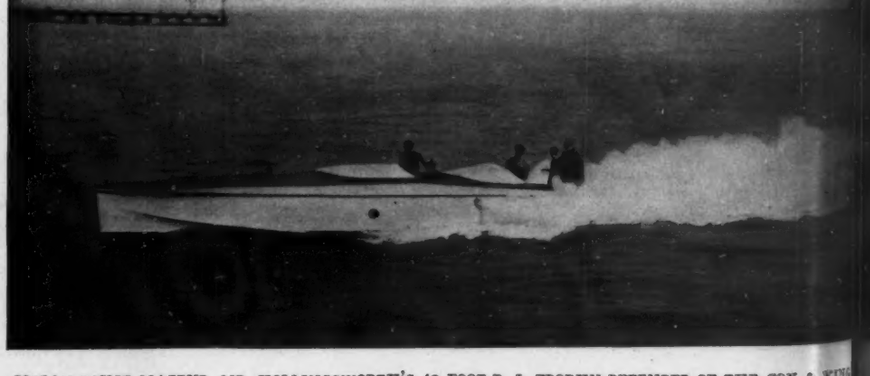
The first race on the Solent will be held Monday, August 11th, and will continue every day thereafter until one country has won two races. So far, three countries are represented, America, England and France.

The Situation in the P Class

The P class is still furnishing some of the most interesting racing both on the coast and on Lake Michigan, and with one exception the new boats are not having everything their own way, the one exception being Josephine, sailed by Addison Hanan on Long Island Sound. On Massachusetts Bay the older boats, Italia and Amoret, are doing pretty well against the Stranger, the new Sayonara and Onda, although Stranger has done remarkably well in the number of wins, and at this writing is close up on percentage for the Lipton Cup. Josephine, however, on Long Island Sound, has practically swept everything before her. It makes no difference whether it blows hard or blows low, the lean, sleek Hanan craft usually comes in well ahead of the fleet, so that it is almost a foregone conclusion, barring luck, that she will win. In this boat the designer seems to have made a wise move in taking his penalty on quarter beam measurement, with the result that he has a boat that is something between an out-and-out new rule boat and those built under the old rule, which permitted longer and fuller ends.

Activity at the Southern Yacht Club

Down on Lake Ponchartrain, near New Orleans, yachting activity is very apparent just now and racing is the keenest that it has been for years. The Southern sailors have long favored the scow type of boat as suited for their waters, and have collected quite a fleet of flyers in this class getting boats from the Atlantic Seaboard, the Inland Lakes, and wherever a fast one could be found. Among the fleet there may be mentioned Massachusetts, built for the defense of the Seawanhaka Cup in 1910; Kathryn I, one of the best known inland lake boats, and a number of other fast ones.



CORDON ROUGE MAJEUR, MR. HOLLINGSWORTH'S 40 FOOT B. I. TROPHY DEFENDER OF THE COX & KING BOW WAVE COLLECTING TYPE

Ediana Wins the Brooklyn Ocean Challenge Cup

By L. deB. HANDLEY.

ONCE more the Ocean Challenge Cup of the Brooklyn Yacht Club has changed hands, and the trophy, which has stood as the classic for off-shore racing in small sailboats since it was first offered in 1905, was won early in July by Commodore John A. Crowley, of the Harlem Yacht Club, with his thirty-one-foot sloop *Ediana*. His adversaries were R. E. Stoddard's sloop *Amada* and Robert N. Bavier's yawl *Hyperion*, defending for the New Rochelle Yacht Club, holder by virtue of the victory scored in 1910 by Herbert L. Stone's *Waialua*.

It was the consensus of opinion among the veteran Corinthians who took part in the event that they had never enjoyed a better contest or a harder one. The fact that the three competing craft were within sight of one another throughout the first and second days of sailing prevented interest lulling, and the weather gods saw to it that skippers and crews had work cut out for them from start to finish.

The conditions of the deed of gift call for a race of not less than two hundred miles outside of headlands and the same course as that of 1910 was selected: from Echo Bay to and around Vineyard Sound lightship, thence outside Block Island and Long Island to the committee boat of the Brooklyn Y. C., anchored off the Marine and Field Club in Gravesend Bay.

The starting gun sped the little fleet on its 280-mile journey at 10 o'clock on the morning of July 4. *Amada* crossed in the lead with *Ediana* close under her lee and *Hyperion* a few lengths back. A light breeze from the SSW. at first gave the boats a broad reach down the Sound, but it was shifty to a degree and balooners and spinnakers later had to be set and taken in at frequent intervals. Occasional periods of calm were also experienced during the early hours of the trip, but on the whole good progress was made, Old Field Light being passed shortly after 2 o'clock.

Hyperion found the reaching to her taste and from the beginning outfooted her rivals, at times gaining an advantage of two or three miles; but the flukey puffs favored first one, then the other, and positions often changed. A fresh southerly presently sprang up and *Ediana* profited most by it. She gradually closed in on *Amada* and after several luffing matches succeeded in drawing clear of her, next pulling down *Hyperion* quite a bit.

After weathering Horton's Point the flood tide suggested the advisability of hugging the Long Island shore and all three boats headed up to within stone's throw of the beach. Thus the procession reached the eastern end of the Sound. *Hyperion* rounded the light into Plum Gut at 7.25 P. M. and *Ediana* followed at 7.37. *Amada*, a few hundred yards behind, preferred to tackle the riddles under Plum Island and skirted Old Silas Rock into the open.

Sundown brought flapping canvas. Fitful catspaws came and went, causing constant shifting of light sails, and for a while the pace was snail-like. But later, creaking spinnaker poles told of stirring air and thereafter better headway was made. *Ediana* hauled abeam of the Northerly Light on Block Island at 2.50 A. M.

THE WINNER, EDIANA, OWNED BY JOHN A. CROWLEY, HARLEM YACHT CLUB

Meanwhile a nasty beam swell had been making and dawn broke over a rolling sea that tossed us about with irritating insistence, shaking the wind everlastingly out of the sails. Then daylight showed us both *Hyperion* and *Amada* far ahead, running down on Vineyard Sound lightship, and our cup of bitterness was full. The big yawl rounded at 5.40, Stoddard's sloop at 5.44, and we trailed along at 6.27.

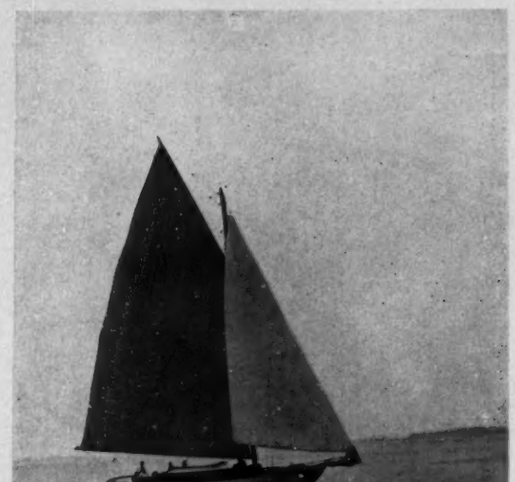
Things looked pretty bad for us. *Ediana* allowed 51 minutes to *Hyperion* and 1 hour and 24 minutes to *Amada*, and here we were at the heel of the hunt after covering nearly half the distance. It became obvious that only a deal of windward work in a blow could help us. *Ediana* was under-rigged for light weather and literally outclassed in the obtaining conditions.

But the auguries were propitious after leaving the light vessel. We found that we could not lay our course and that the wind was slowly but surely gaining strength. All three boats took a long tack with booms to port, pointing on an average SW., so that neither Block Island nor Montauk was sighted. For us it was a heartbreaking stern chase, even though we crawled up inch by inch, edging well to windward of *Hyperion* and alongside but badly to leeward of *Amada*. For six grinding hours we babied *Ediana* along, close hauled; then, at 12.30 noon, the yawl put about, heading down the Long Island shore. *Amada* and *Ediana* kept on and crossed her bow; she had lost the lead.

A sudden hauling of the breeze forced the *Amada* off a couple of points about an hour later, and she promptly took advantage of it by spinning around; we felt it a few minutes after and followed suit. Rails were wet, by then, and the sea was rising fast. Pretty soon the wind had attained the velocity of a half gale and continued to harden. *Ediana* was coming into her own; with every bit of

BOILING DOWN THE LONG ISLAND SHORE ON EDIANA

AMADA AND HYPERION AT THE START



AMADA, B. R. STODDARD'S NEW ROCHELLE DEFENDER

rigging straining she paced smartly, and the big waves seemed not to bother her at all. She just flung them carelessly aside, with scarcely a check, and swept on. We could see *Amada* growing larger and larger over the starboard bow, and hope blossomed anew within us. The race was yet young; one hundred and fifty miles, or more, remained to be traveled and the elements were embracing our cause.

We were about fifteen miles off Montauk and had bridged all but a scant half mile of *Amada's* lead, when we saw her unexpectedly assume a phantom-like aspect and then disappear completely from view. A heavy bank of fog had swallowed her as if by magic. We ran into it ourselves, next, and the fleecy vapors shut in so tight that the very headsails were barely visible from the cockpit.

It was a weird sensation, that mad racing through the pounding, crest-topped waves, seeing nothing, hearing only the shriek of the wind and the roar of the ocean. For half an hour, possibly less, we sped on in total silence, eyes and ears alert, anxious to catch the first warning of the dangers which always lurk in a fog. Then a ghostly white shape sprang into form out of the misty blankness, and the sails of *Amada*, magnified to an enormous size, loomed up over the quarter, to leeward, and not a cable's length away. It meant that the pall was lifting, and we had double cause to rejoice, for we were also at last in the van. A brief space and the sun was again shining in the sky.

Ediana, meanwhile, was tearing along in great fashion, eating up the distance and behaving beautifully. *Amada*, instead—it seemed to us—was beginning to labor, lugging sail in puffs. This was not to be wondered at, for it was blowing 25 miles an hour steadily, thirty at least in the gusts, and the water was extremely rough. Hardly the weather for a small craft to defy under full canvas. At all events, we were dropping her and by dusk she was a mere speck on the horizon.

Night fell, dark and ugly. There appeared to be even more weight to the wind; and though *Ediana* is a fine, able boat, that stands up splendidly, there were times when her deck buried to the cockpit coaming. It was a wonderful, stirring sail. The staunch little ship under us seemed to become a thing alive, battling against the heavy odds with desperate resolve to triumph, and the spectacle of her brave, smashing fight sent one's blood coursing wildly through the veins. She was moving too fast to rise to the oncoming seas and she crashed into them with deadly purpose, her flanks shooting great jets of phosphorescent spray thirty feet out, her bow shoveling green water that sluiced back in torrents and raked her whole length.

"ONE OF THE CREW SPRANG UP THE STICK"

Not until after midnight did the gale cease howling, yet throughout the nine hours of strife we drove the *Ediana* to the limit without parting a strand. Less fortunate was *Amada*. Her water tank took to leaking and flooded the bilge so that the pump had to be manned for a spell. The

(Continued on page 110)

An Old Sailor's Yarns

Being the Reminiscenses of an Old Sailor on a Long Life at Sea.

By CAPT. R. F. COFFIN.

The Story of a Cabin Boy

"WHATEVER were his real name, sir," said the old sailor, as he settled himself back comfortably in his chair, "I never know'd; but the name we know'd him by were 'Crippy.' Wherever the old man got him I don't know; some said as how he come out of some asylum or other; but, anyway, he were a most miserable-lookin' wretch when I first laid eyes on him, which were when the old man came on board in the arternoon, and we got under way and towed down and anchored in the Horseshoe, 'cause the wind was southeast and dead ahead. She were a big lump of a bark, bound from New York to Rio, and I had shipped into her 'cause I were hard up and times was hard, and I were glad to git a chance to go anywheres, and I didn't know nothin' about this here old man; his name were Thompson, and he were a infernal rascal.

"I took my bag and hammock aboard of her, alongside of the dock, and me and another chap by the name of Tim Walker was the only two that went out into the river with her; but durin' the day the other five was brung off—there was only seven of us afore the mast—and along about four o'clock the old man come off, and he brung this atomy of a boy with him, and we got the anchor and towed down into the Horseshoe, where we anchored at a little arter six o'clock.

"If ever there were a human that looked as if he'd jist desarted from a graveyard, it were this here Crippy. He were as thin as the leaf of a psalm book in the first place; he had red hair, which probably had never been combed since the day he were born; one of his eyes was slewed athwartships and the other were troubled with some kind of disease which kep' it a-runnin' all the time, the grime from the eye constantly ploughin' a furrow in the dirt on that cheek, which give it a kind of a streaked appearance on that side, contrastin' oddly with the plain dirt of the other cheek. His nose were short, and turned up at the end, and his mouth were so wide that when he opened it the top of his head seemed to be an island. Two of his front teeth had been knocked out by the old man in one of his tantrums, and he had one upper tusk that ought to have been knocked out, 'cause it stuck right out, and no amount of lip would cover it. His clothes were the cast-off dunnage of the old man, and fitted him like a purser's shirt on a hand-spike. His breeches, bein' a good deal too long, was turned up at the bottom; his weskit reached well down amidships, and the tails of his claw-hammer coat was only jist clear of the deck as he walked. As the old man came over the side, he waited until this Crippy came over, and then, fetchin' him a wipe alongside of the head which made the poor boy stagger, he pitched a bundle of papers to him, tellin' him to stow 'em away in his room, and to see everything to rights there, 'and mind you, young whelp,' says the old man, 'if I find anythin' wrong there when I come below, you'll catch it; so mind how you draw your hair strokes.'

"I had the watch from ten to eleven, and along about a quarter past ten, as I were sittin' on the windlass end smokin', I heerd the most on'arthly screechin' aft, and I goes along for to see what were the matter. The bark had a half poop trunk cabin, and gittin' on to this, I looked down the skylight, and there saw this here Crippy strapped down to a settee, and the old man a-givin' it to him with a small cat which he had made out of ratlin' stuff, and it were him a-screechin' that I had heard. Well, sir, of course it weren't no business of mine; boys aboard of a ship must [illegible] and there he were when I were relieved at eleven o'clock, and there he remained, I were told arterward, till the steward turned out in the mornin' and loosened him and set him to work. He could scarcely stand up when the steward cast him loose, 'cause he were stiff from remainin' in one position and sore from the wallopin' he'd had, and so the steward he had to cuff and beat him a little to make him more spry.

"Well, sir, we got under way next day with a crackin' breeze from nor'-west, and in two or three days was out across the Stream and into fine weather. But there weren't no fine weather for us aboard of that hooker; it were work all day and miserable grub and constant abuse from the officers. I come early to grief, 'cause I weren't used to such treatment, and when the second mate give me a clout side of the head for to make me move faster, I jist hauls off and lets him have one atwixt the eyes that laid him out senseless for a time. Well, the mate he come for'ard, and I jist told him for to keep his hands off of me; that if I had done any wrong I'd go in irons, and so he put me in irons, and I were locked up in one of the state-rooms. I weren't kep' long though, 'cause I were in the second mate's watch, and there were only three of us, and takin' me out left but two, and the second mate had for to do my share of the work, which he didn't like, so he got me let out arter twenty-four hours.

"The old man, he says, 'I ought for to keep you in irons to the end of the v'yage, and then hand you over to the consul; but as I needs your sarvices, I will let you turn to if you will promise to behave.'

"Says I, 'Captain Thompson, I has been into ships to which this here bark ain't fit to be nothin' but a jolly-boat, and I has always behaved myself satisfactory. The work aboard of this craft is hard and humbuggin', and the grub is poor and abuse frequent; all that I can stand, and mean to, till sich times as I can change; but blows I won't stand, neither from you nor your officers, and if you chooses to let me out of irons onto them terms well and good, I'll do my duty; and if not, not.'

"So on that I were let out of irons, and though the second mate gave me all the dirty jobs to do that he could think of, he didn't never strike me no more.

"Well, sir, it would take me too long for to tell you of all the cruelties I seen practiced onto this Crippy. The old man seemed to be delighted if he could only torment this poor devil. He were mortally timid, and they used for to make him go out onto the end of the spanker-boom when she were pitchin', and ride it for hours. They called that 'ridin' St. Anthony.' Some times in very light weather they'd head him up in a barrel, cuttin' a hole for his head to come through, and then ballastin' the barrel and chuckin' it overboard, a-makin' believe they was a-goin' to leave him for good and all, and then, arter leavin' him away astarn, the old man would lower a boat and pick him up. Sometimes when she'd be goin' two or three knots the old man would have a whip rove at the main yardarm, and he would bend the end of it onto Crippy jist under his arms and run him out over the side. He'd first let him drop three or four times into the water, and then he'd run him about half way up to the yardarm and leave him swingin'. It weren't that there were anythin' very bad in these deviltries, except for the mortal terror they gave to the lad, and his screechin's were jist awful to hear at these times. I don't believe any lickin' the old man ever gist him were hurt [illegible]

garet, what had got her load and were bound to Baltimore, for to stow me away aboard of her. The night I went aboard of her I had the anchor watch from twelve to one, and I got all my dunnage into my bag and were jist a-goin' over the side with it when who should appear before me but this here Crippy.

" 'You're goin' for to run away,' says he. 'Oh, take me with you, Tom; take me with you, for God's sake!' And the little atomy flopped down on his knees on the deck afore me, as if I'd been his guardian all my life. I were completely took aback, for it were one of the old man's rules that this here chap weren't never to speak to us chaps afore the mast, and this here mite had never had so much to say to me afore. How ever he got to know I were a-goin' I can't say; but here he were down on the deck afore me a-beseechin', and I tell you what it is, sir, I jist felt that I'd stand to that boy till the last drop of my blood if necessary. If I couldn't stand that craft, how much more couldn't he, that had so much more to bear? And I says to him, 'Take you with me? Of course I will, my boy, and I jist like to see the man as would try for to stop me,' and I felt uncommon like whalin' somebody jist then.

"Well, sir, we goes aboard of the Margaret, and we finds my chum, who were a-waitin' for me. He were rather took aback when he seed Crippy; but I telled him enough about the boy for to make it right, and we were stowed away snug down into the fore peak. I were told arterward that the old man had all the police of Rio at work for to hunt us up. He didn't care so much for me as for the boy; he wanted him, and promised somethin' awful in the way of whalin' if he caught him, which he never didn't do no more.

"The day arter we got to sea I come out and I goes to the mate, and says I, 'I'm a stowaway aboard of your ship, sir, but I'm a good sailor-man, and can 'arn my grub. I've got a chap with me that won't eat much, even if he can't do much work, and I'm willin' for to do his share of work as well as my own. We've left the bark we were in because she were a hell afloat,' and I ups and I tells this mate of the way I'd seen Crippy abused. Well, would you believe it, sir, I actually struck a soft spot into this here mate, and he cottoned right to that boy at once, and says he, 'You've done jist right, my man, and I'm glad for to have you aboard; I'll take that boy aft and let him take care of my room, and that'll be easy work for him.'

"The next time I seed Crippy, sir, I hardly know'd him. He'd got his face washed clean, and the mate had rigged him out complete in a set of his toggery. It were rather large for Crippy, but it done better than the rags he had been a-wearin'. The boy got to be a great favorite, both with the mate and the old man; he were sich a willin' chap, and in consequence of my bringin' him I had good, easy times of it; and when we got to Baltimore, the old man offered for to keep Crippy and make a man of him; but the lad had suffered so much at sea that he were determined he would starve to death on shore afore ever he'd go on blue water ag'in; so the old man he shoved him off onto a parson that run a sailors' Gospel shop there in Baltimore, and he made him head scavenger of that consarn, and here I lost sight of him, 'cause I shipped in a brig that were goin' to Montevideo for hides, and went away to sea."

The Ship's Crew Shanghaied

"It must have been, sir," went on the old sailor, carefully paring the end of a plug of Black Jack into the palm of his hand, rolling it fine and refilling his pipe, "jist arter I went to San Francisco in the Flyin' Cloud that I went up for to try my luck at the mines; but I didn't stay there long, for the work were hard and the livin' were hard, and the chaps that was there were harder still. I were glad for to git back to the city, with jist what I stood in and not a cent in my pocket. Hows'ever, wages was good along shore, and there was plenty of work, and so I concluded I'd stay ashore for a spell; at any rate, till I'd saved up enough to buy a chest of clothes. The wages seemed a good deal bigger than they was in reality. Six dollars a day to a man as had been a-goin' to sea all his life for $15 a month seemed a fortin; but everythin' was so high in proportion that at the week's end, if you jist squared the yards, it were about as much as you could do, anyhow. Still, there were plenty of work, and it were a change from goin' to sea, so I stuck at it for two or three months, and likely should have continued longer if I hadn't have got fetched up in the way I am goin' for to tell you.

"The clipper ships was arrivin' out pretty lively them days, some from Boston and some from New York, but most of 'em from New York; and as fast as they arrived all the crews would leave 'em, and that give us chaps what were workin' along shore plenty to do, unloadin' 'em and gittin' 'em ballasted and off to sea ag'in.

"I mind when the Challenge arrived from New York there were a great row along the shore as soon as her chaps landed, 'cause they give out that some thirteen of her crew had been killed by the officers on the passage out. 'Bully' Waterman were the captain of her, and a chap by the name of Douglas were the mate. I never heerd the rights of the yarn, nor how it were the trouble happened. Some said as how the officers had sich a bad name in New York that they couldn't git nobody but the rakin's and scrapin's of Water Street for to go into her, and that they made their brags afore they went aboard that they'd kill 'Bully' Waterman afore they got round the Horn; and bein' so many of 'em, it's a wonder they didn't; for she were a tremendious big ship, and had over a hundred men afore the mast. The mate had a bad name, along of gittin' some men aloft to bend a topsail in Liverpool docks, with the yard mast-headed, and then lettin' go the halyards, whereby some of 'em was shook off and come down on deck by the run, smashin' theirselves all to smithereens; and it bein' in the dock the English courts could overhaul it, and they sent this mate up for a couple of years, and he had jist got done sarvin' his time when he ships into the Challenge.

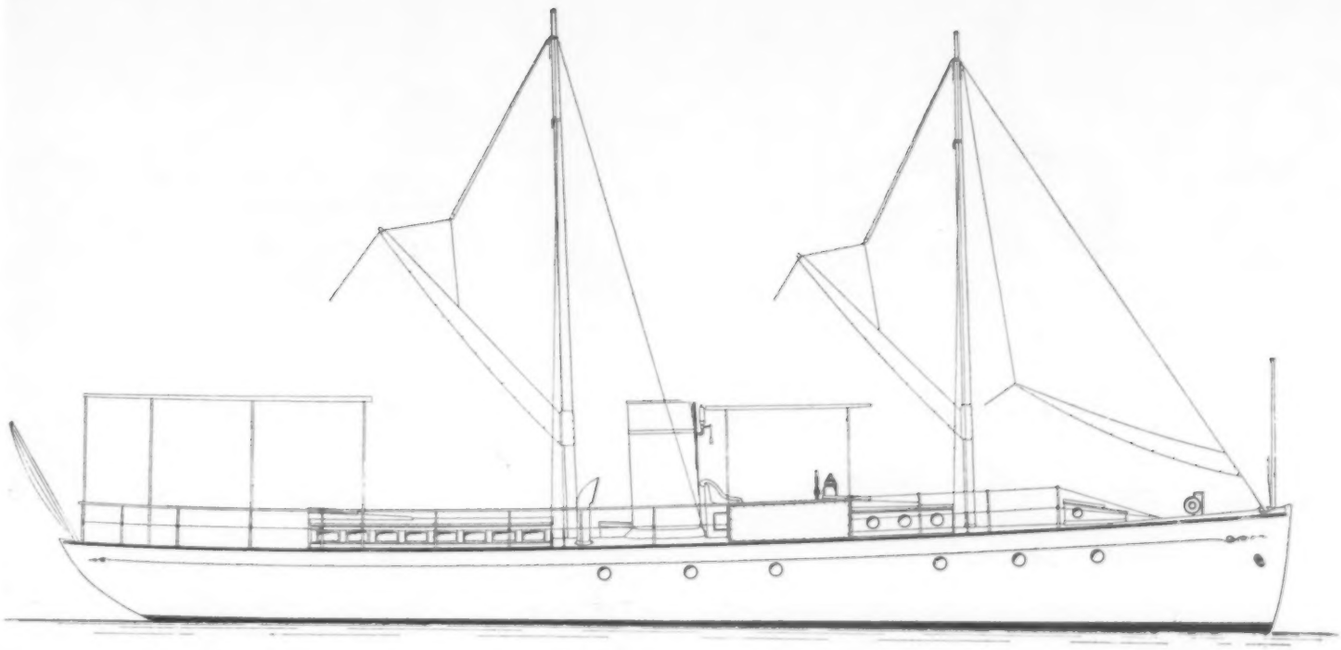
"Leastwise, this were the yarn that were spun along shore there in San Francisco; I don't know if it were true or not, but I do know that as soon as it were know'd that thirteen of the crew had been killed by these officers, the cry was to lynch 'em, and a crowd collected and went for 'em; and if they had caught 'em, that first arternoon, there wouldn't have been no bother of a trial, but hung up they would have been sure. The consignee of the ship, hows'ever, got wind of it, and he stowed 'em away somehow, and the mob couldn't find 'em. Well, the excitement died out in a few days, but still they kept pretty shady, and arter a while it come to be known that this here mate were shipped aboard of the ship John Bertrand, lyin' in the stream and bound for Calcutta.

"You may well suppose, sir, it weren't easy for to git a crew for that ship. Wages was high—$150 by the run to the Sandwich Islands—and, further than that, no sailor would ship to go. There were always plenty of chaps that had been to the mines and got a little pile, or had made somethin' workin along shore, that was willin' enough to go that far jist for the sake of gittin' somewheres where they could spend their money comfortable, for there was some things that couldn't be had in San Francisco them times, no matter how much money you had, and so ships didn't have no trouble in gittin' crews; and very frequent, arter goin' to the islands and layin' a couple of weeks, they'd ship the same crew ag'in, they havin' busted out all their money, and bein' hard up.

"But, with regard to this ship I'm tellin' you on, nobody wouldn't touch her, not at no price. Hows'ever, a crew she had to have, somehow, and these 'ere two chaps what I told you about —Lyin' Jim Granger and the other chap—they was in the shippin'-master business, and they took the contract for to supply a crew for the ship. There weren't no advances give them times—the men shipped for to be paid on arrivin' at Honolulu—but these two chaps was to receive $50 a head, cash down, as soon as the ship were outside the Heads.

"I weren't a-payin' any attention to sich things, not yet bein' tired of workin' along shore, and so one mornin', while I were waitin' for a job, a chap comes along and says he wants some hands for to trim ballast aboard of a ship in the stream. So I jumps for'ard, along with a lot of others, and the chap picks out

(Continued on Page 108.)



An Interesting and Able 60-Foot Power Cruiser

THE accompanying plans of a 61-foot seagoing cruiser are from the office of John G. Alden, N. A., of Boston, Mass., and show a very interesting and able craft. The boat is completely flush decked, with the exception of the last 12 feet, where the deck is lowered one foot, forming a comfortable, protected lounging place. The deep draft, besides making a good sea boat, allows placing the floor low enough to get headroom under the deck. The after cabin house was designed to get more floor room in the saloon, and on account of the better light and ventilation afforded, as sash windows can be used on a seagoing boat if not carried too far forward.

A small house also extends over the forward companion and part of the staterooms. This house has hinged brass ports, which insure against leaks into the staterooms in bad weather. This house, together with weather cloths on either side, forms a good protection for the bridge. A good sized stack is placed directly over the engine room for ventilation.

The main cabin is aft and is entered from the sunken deck. It has two extension transoms, two buffets with lockers, shelves over the transoms, and large clothes lockers for use in case the cabin is used as a stateroom.

The galley is just forward of the cabin and is four feet long and the full width of the boat. A large ice box is installed to provide for long trips, besides the usual range, sink, closets, etc. The galley opens into the main cabin and is also entered from a hatch in the cabin top. Just forward of the galley, and separated from it by a water-tight bulkhead, is the engine room. The location of this compartment brings the weight of engines and fuel just over the centre of buoyancy of the vessel, which will have the effect of materially decreasing pitching in a seaway. The power equipment consists of two 25-35 four-cylinder engines. The fuel tanks, with a capacity of 400 gallons, are located on each side of the engine room, with work bench, lockers and space for auxiliary lighting plant, batteries, etc.

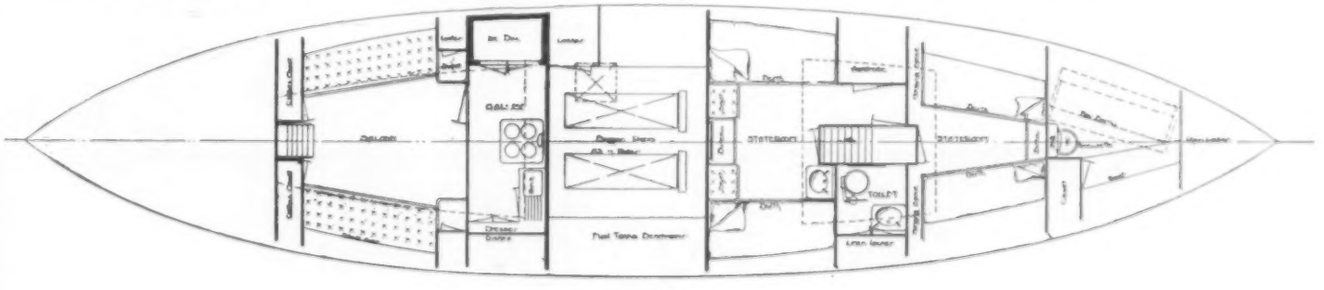
Entering the forward companion at the bridge deck, the steps go to a landing with doors leading to the stateroom and toilet. The owner's stateroom is the full width of the boat and has wide berths, two seats, a bureau and a large wardrobe. Forward is another stateroom, also the full width of the boat and having two berths. A hanging space is provided at the after end of the berths and a bureau is placed at the forward end. The crew's quarters are forward of this, entered by a booby hatch on deck.

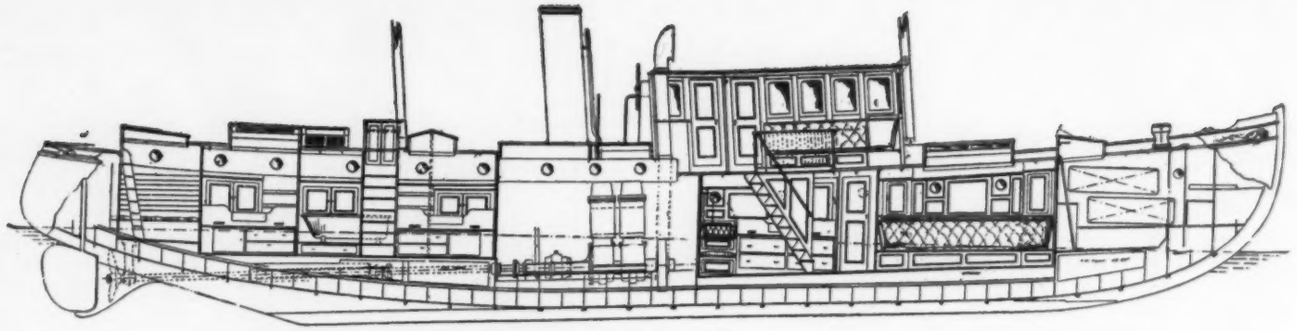
The lines show quite an amount of deadrise and fairly deep draft for steadiness in a seaway. The profile shows the conventional overhanging bow and canoe stern, while the sheer is unbroken from stem to stern. For a 60-footer the total height above water is less than usual, while the weights are low and well placed. This design should prove an exceptionally fine sea boat and ought to appeal to the man who wants to use his boat on long cruises. The spars are stepped on the keel and spread a moderate area of canvas, which is located so that the boat will steer easily when the sails are in use.

The dimensions are as follows:—

Length over all	61 ft. 0 in.
Length water line	55 ft. 6 in.
Beam	13 ft. 0 in.
Draft	4 ft. 6 in.

She will have about three tons of ballast. Two-thirds of this will be placed outside in the form of an iron shoe extending about 20 feet in length, which will greatly strengthen the boat and reduce rolling to a minimum. In boats of moderate power it has been found that the adding of the ballast makes only slight difference in speed, and yet the boat is much more steady.





An 80-Foot English Power Cruiser

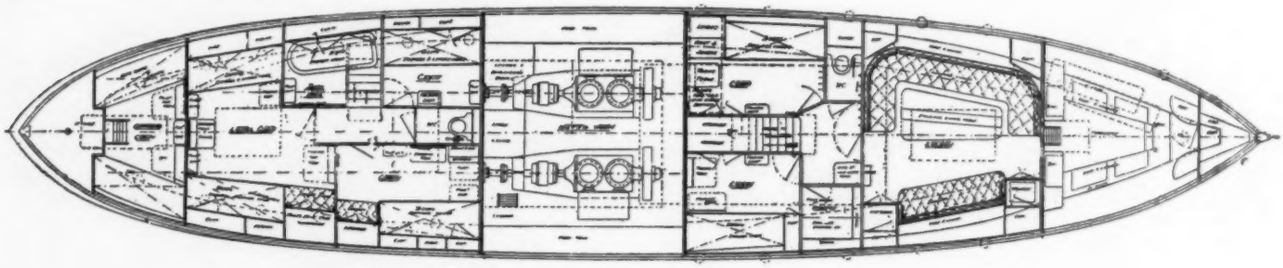
THE accompanying plans from the board of Mr. Linton Hope, one of the foremost English naval architects, present a number of novel features and show, in a measure, the trend of power boat design in the British Isles. The boat was designed with an idea of producing an extremely able, roomy and comfortable craft, and the plans certainly seem to indicate that the boat fulfills these requirements. She has excellent sheer, a rounded stem and forefoot something after the style of steam pilot boats, a low and heavy deck house over the after cabin, and a deck house with full headroom just forward of amidships.

Another novelty is in the power, which consists of two hot-bulb Kromhout engines of 80 horse-power each, with reversing clutches. The contract speed with this power is 10½ knots, but it is expected that at least 11 will be attained.

The boat is divided into six water-tight compartments by means of five water-tight bulkheads, a very unusual form of construction in power boats of this size. The forward compartment is the chain locker, while in the second are located the crew's quarters. The officers' cabin, however, is aft, with a separate companionway from the deck.

The interior accommodations consist of a large main saloon below, four staterooms, two baths and a large ladies' cabin with sleeping accommodations for two—truly an unusual amount of room for a boat only 80 feet in length. In addition to these, there is a large deck saloon, which may also be used as a dining room, as it connects with the galley right aft of it. The saloon below is capable of accommodating twelve people at a meal.

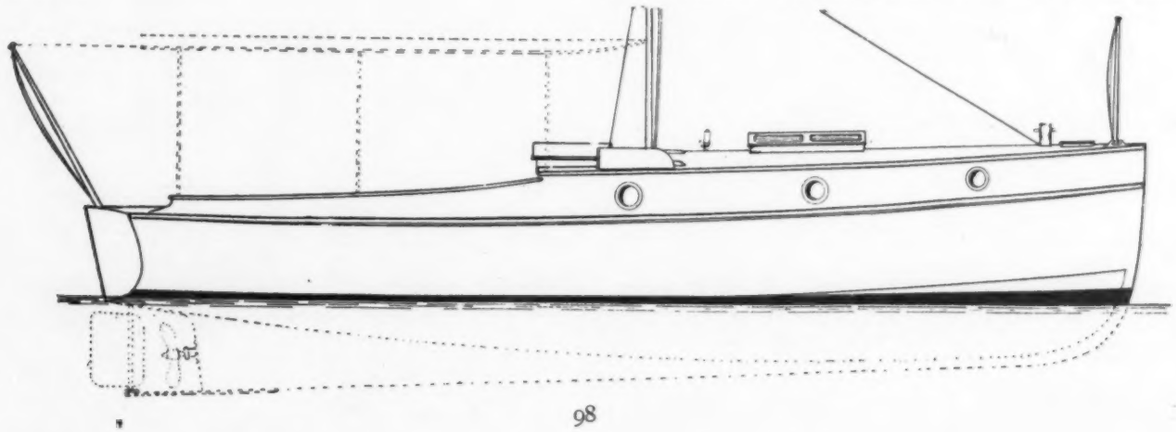
The engine compartment is amidships, and only occupies a fore and aft space of 12 feet. Fuel tanks are on either side of this room, providing capacity for a wide cruising radius. The boat is steered from a bridge just aft of the forward deck house. She is equipped with two masts.

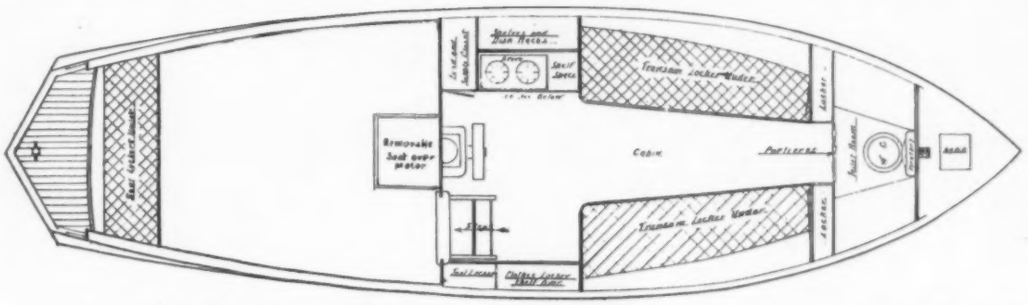


A 28-Foot V-Bottom Cruiser

THE accompanying plans are of one of the latest models of the "V"-bottom type, designed for cruising purposes. The boat is a 28-foot, raised-deck cruiser, with a beam of 8 feet 4 inches.

Sleeping accommodations for two are provided, but two folding berths may be put in, which will comfortably take care of two more persons. At the forward end of the main cabin are located a toilet room and two clothes lockers. Under the transom berths





commodious locker space will be found.

The power plant is a 14 H.-P., 2-cylinder, 2-cycle motor, with reverse gear. The controls are led to bulkhead control levers located alongside of the steering wheel. This hull is designed and built by the Bayonne Launch Company of Bayonne, N. J., as a stock model.

A 16-Foot Catboat for the Taft Cup Races

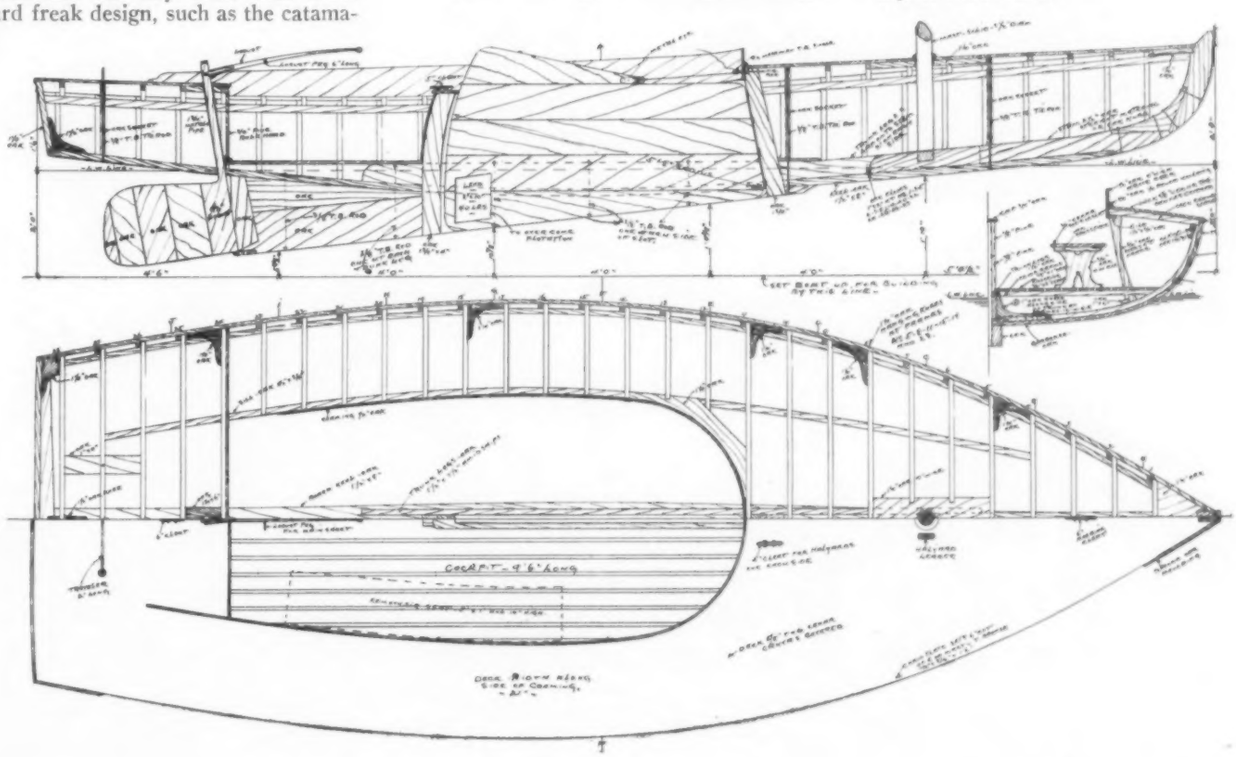
WE reproduce herewith the sail and construction plans of a 16-foot waterline catboat designed as a candidate for the Taft Cup races on Lake Erie, from the board of John A. Connolly, Jr., of Brooklyn, New York. Three boats from these plans have been built for the Walkerville Yacht Club of Walkerville, Canada, and with them the Canadians will try their luck against Old Sam, the present champion, and Ethel, another fast catboat, owned by Dr. T. B. Aldridge, of Detroit.

These new catboats are 21 feet 11 inches long overall, 16 feet on the waterline, 8 feet 1 inch beam, and 6 inches draft of hull, the extreme draft to bottom of deadwood being 1 foot 7¼ inches. They carry 270 feet of sail, the limit of the class. The boats are quite flat, setting well on top of the water, and should prove very fast.

The rules governing boats eligible for the Taft Cup call for a conventional type of boat and bar any craft that tends toward freak design, such as the catamaran, double hulls, square bows, or other unusual features. Bilge fins, bilge boards, double rudders or similar devices are also barred. The rudder must be hung on the skeg or deadwood, which shall fill in the space on a straight line between the forward end of centerboard slot and the keel of the rudder post.

The boats are not to exceed 15 feet rating measurement, which measurement is obtained by adding the length overall and the extreme beam and dividing by two. The length overall shall not exceed 22 feet or the beam be less than 7 feet, while the sail area shall not exceed 18 square feet of each foot of rating measurement. The minimum freeboard shall be not less than 15 inches and freeboard at the bow shall not be less than 25 inches. The boats must be cat-rigged and only one sail is allowed.

No time allowance is allowed between contestants for the Cup, which practically means that all boats must measure at the top of their class.



A Good Small One-Design Class

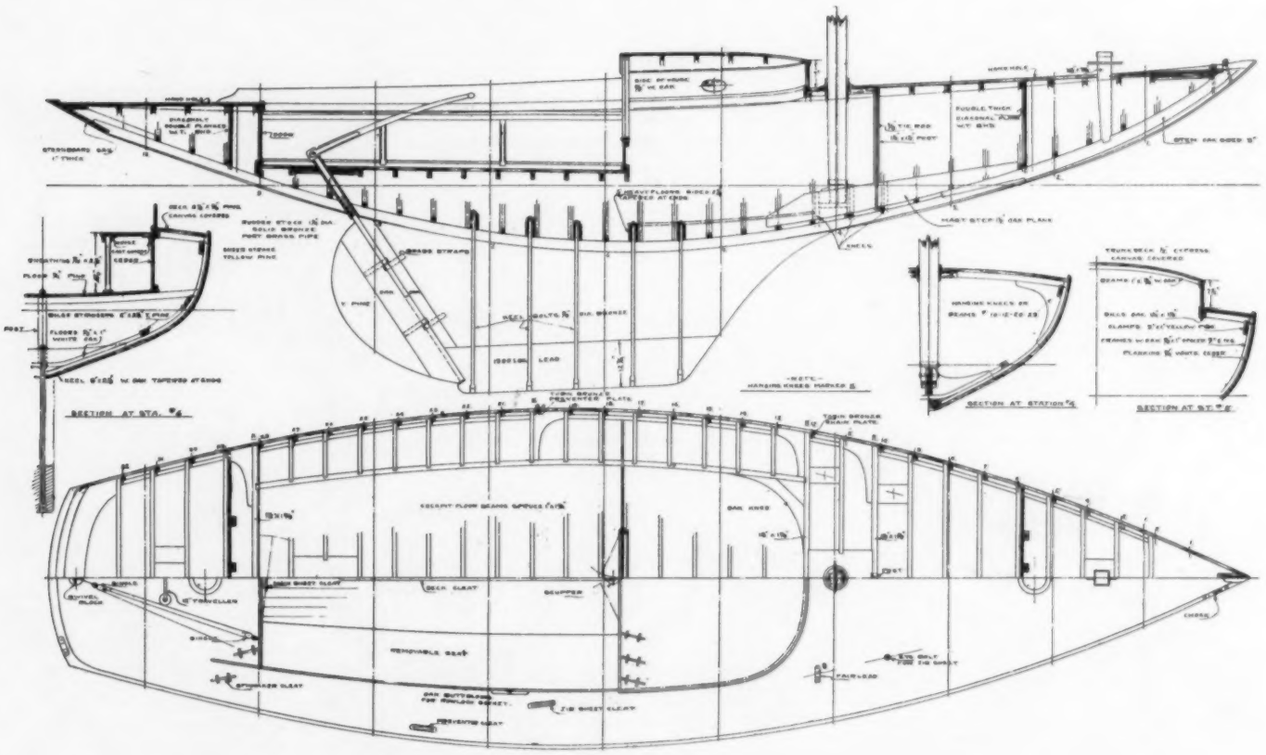
ONE-DESIGN classes seem to be at the height of their popularity just now, and Buzzard's Bay yachtsmen are among those that have a new class this summer.

These little boats, the plans of which we publish herewith, are from designs by Swasey, Raymond & Page. They are 26 feet 1½ inches long overall, 16 feet 7½ inches on the water, have a beam of 7 feet 5 inches, and draw 4 feet 6 inches, with a total sail area of 330 square feet. They are fine, able little boats, with good freeboard, moderate ends, sharp entrances and easy run. They are keel boats and have 1,500 pounds of lead ballast bolted on the keel with ⅞ inches bronze bolts.

The cockpit is ceiled and is large enough to seat a fairly large party comfortably. There is a small cabin house forward, forming a sort of cuddy, in which to keep sails, oilers, etc., though two sleeping transoms could be built there if desired. There are watertight bulkheads fore and aft, which, in addition to the ceiled cockpit, make the boat practically unsinkable. The decks and top of cabin houses are canvas-covered.

The rig follows the conventional knockabout style, with jib running to stemhead, bottom extending but very little over the counter, and a high-peaked mainsail. There are five of these little boats being built for Messrs. H. W. Harris, of Boston; E. S. Webster, of Boston; D. L. Whittemore, of Newton, Mass.; H. L. Pratt, of New York, and A. C. Harrison, of Philadelphia.

Try outs have demonstrated that they are extremely able, and the design is eminently suited to the high winds and high, choppy seas which are prevalent in the southern part of Buzzard's Bay.



Mess Room Talk

IN this Department we will answer questions concerning the problems which boat owners are constantly running up against in the operation of their motors or the handling of their boats. Theoretical as well as practical questions will be answered promptly by mail, and when of sufficient interest will be printed for the benefit of YACHTING readers. This service is free. Don't hesitate to make use of it. Address, Information Department, YACHTING, 141 W. 36th St., New York City.

Corrosion Due to Galvanic Action

POUGHKEEPSIE, N. Y.

In buying a boat built and engined on fresh water is it necessary to have entire salt water fittings when the boat is used in brackish water, such as the lower reaches of the Hudson and occasionally in the salt waters of Long Island Sound? How quick is the galvanic action of salt water between steel and bronze? S. P. M.

If a boat is used on salt water at all it should be fitted with bronze shaft, brass pump parts, bronze rudder, skeag, etc. Salt water rusts steel very rapidly, and a single season's use will often play havoc with steel engine parts that come in contact with the water, especially bolts, nuts, etc. The additional cost of full salt-water fittings is easily saved in a few months' time.

Corrosion due to galvanic action between steel and bronze is very rapid, and a steel shaft should *never* be used in salt water with a bronze propeller or rudder. A week, or even less time, will start pitting in the steel. High-grade steel is more susceptible to galvanic action than lower or softer grades. A season in salt water would practically ruin steel parts near to brass or bronze.

Concerning the Raritan Canal

ELIZABETH, N. J.

I want some information concerning a motor boat trip from Staten Island Sound to the Delaware River. I understand it can be made by way of the Raritan and Delaware Canal, and would like to know how many locks are to be passed through, and what expense or charges are made on a 25-foot boat. J. P. F.

From Staten Island you can go by way of the Raritan River to New Brunswick, N. J., where you enter the Raritan Canal. This canal runs from New Brunswick to Bordentown, on the Delaware River just below Trenton. There are two locks at New Brunswick, one at Bordentown, and a few in between. There are not so many that you cannot make good progress.

The toll for the canal varies with the size of the boat. For a launch about 30 feet in length I believe the toll is about $6. There are no other fees for going through the locks. All bridges are draw bridges or of a sufficient height to permit a boat with a military mast to pass under. The canal can be run in one full day, or in a day and a half if you stop over night on the way. The lock masters at either end of the canal will furnish a printed slip of the canal regulations.

Sailboat for Beginners

PRINCETON, N. J.

Will you kindly advise me the best way to go about getting a second-hand sailboat to meet following requisites for use of my children:

(1) Seaworthiness; for sailing in Buzzard's Bay; not much overhang; fishing type preferred.

(2) Length, 18-25 feet; two sails preferred to one; under rather than over-rigged.

(3) Perfectly plain rig and finish. S. P.

We would advise you to get, if possible, a small knockabout jib and mainsail rig, preferably a keel boat with a ceiled cockpit. These are practically non-capsizable. I believe there are a number of these small knockabouts at present in use on Buzzard's Bay, and that you might pick up one second-hand. I would advise your writing to any of the yacht brokers who advertise in YACHTING. These brokers may have something on their lists that will be just what you desire.

You could, of course, pick up a second-hand catboat on Buzzard's Bay which would be staunch and able without much trouble, but, personally, I do not think they are as much fun to sail as a jib and mainsail boat. A centerboard boat, if properly built and able, might be as seaworthy as a small keel boat, though most of them are apt to have open cockpits and they can be capsized. Danger of sinking in this case is sometimes obviated by the use of air tanks forward and aft.

I believe that there have been one or two small one-design classes on Buzzard's Bay that will just about meet your requirements, and you might get in touch with some one who has such a boat to sell.

Shaft Gearing

JACKSONVILLE, FLA.

I am installing an 18-horsepower, four-cylinder engine, of 4½ inches bore by 5½ inches stroke, in a 28-foot open launch hull I have. Owing to construction of the boat I either have to have the propeller shaft at too wide an angle of rake or provide some other means of gearing. As planned, there is not room for chain drive, center of propeller shaft being only 7 inches below center of crankshaft. Can I get a satisfactory drive from a spur gear on these measurements, propeller to turn at engine speed, about 600 revolutions per minute? What should be approximate dimensions of such a gear and diameter of propeller shaft? I am planning to swing a 22 x 26-inch wheel. H. S. B.

You can undoubtedly get a spur gearing that will give you satisfactory service. A pair of steel spur wheels 7 inches pitch diameter and about 2¾ inches wide would be about right, though if you could bring your two shaft centers closer together you could have a somewhat smaller gear. Shaft diameter with the larger gear should be 1½ to 1⅝ inches diameter. Your wheel is about right for the power and speed.

Leeway of a Flatboat and Functions of a Centerboard

MILWAUKEE, WIS.

To decide a dispute which arose between a few friends some few days ago we would like the following information. The questions are these:

First, what is the principal duty of a centerboard on a boat? Second, will a boat with a centerboard, if let loose to drift in the wind, keep a course of its own or will it drift sideways? and, lastly, can a boat with no centerboard or keel whatsoever be tacked to cut the wind without drifting, or can one start from a certain point and sail out and return to the same place, by sailing only, with the wind in the same direction?

The principal duty of a centerboard in a boat is to furnish sufficient lateral plane to prevent her from sliding off to leeward before the wind, and to enable her to sail at an angle with the driving force, the wind.

In your second question, you do not say whether the boat is drifting with or without sails. If she is drifting without sails a boat will naturally drift off before the wind, usually dead to leeward if she has no guidance from her helm, and provided there are no tidal or other influences. She will do so irrespective of whether or not she has a centerboard. Boats drifting in this way have a tendency to drift broadside to the wind, thus offering the greatest amount of windage.

A perfectly flat boat with no centerboard or keel cannot be tacked to keep a course at right angles to the wind or at an angle sharper than a right angle. Without any lateral plane, a boat with the wind abeam (at an angle of 90 degrees with the boat's fore and aft line), could not sail out and back to a given mark and finish at the starting point, as she would make too much leeway. She could be held up so that she would not go dead to leeward, however, but the angle she would make with the wind would be a very wide one.

The Inland Lakes' Answer

Several months ago YACHTING printed a short article by a member of the Lake Geneva Yacht Club, commenting on the apparent loss of interest in the racing on the Inland Lakes of Wisconsin and Minnesota, a sport that had flourished for a long time and which had developed an extremely fast type of flat, scow-like sailboats particularly adapted to those waters. We print here an answer from an Inland Lake sailor to this article. This answer is not supposed to be an official answer from the Inland Lake Yachting Association. It is merely a personal opinion of one of its members, and YACHTING does not assume editorial responsibility for it, though we believe that there is a great deal of truth in the statements made.

There appeared in the March number of YACHTING an article by Byron Boyden, of the Lake Geneva Yacht Club. It was, as the Editor said, a pessimistic growl against the apparently prevailing indifference to inland sailing, and yet it was also a question containing a slight degree of hope.

The question Mr. Boyden asked was this: "Is the Class A boat on inland waters of the West a plaything of the past?" He implied the further question: "If inland sailing is still alive, why is it so dormant; how can it be roused from its present lethargy and restored to its old-time health and vigor?"

These are questions which the enthusiastic sailors, those few on each of the inland lakes who refuse to see sailing crowded out by other interests, have been asking repeatedly for the last four or five years. Often during this time these men have gathered around the club fires to talk it over and complain of this indifference, and yet but few have brought themselves to answer any one of the questions.

Two of the questions, however, admit of answers. The first, "Is inland sailing still alive?" may be answered in the affirmative. Sailing and inland lake racing are still alive. They have been at low ebb for some time, but the tide seems to have stopped against the enthusiasm of the few but ardent sailors who are active to-day.

The second question, "Why is sailing at such low ebb?" has many answers some applying generally to all sailing and others explaining only local conditions. One of the most popular answers is "the motor boat." This comes so naturally and easily that it is often said without knowledge of actual facts. It is true that the motor boat has absorbed the interests of many old sailors, and is now taking hold of the younger boys before they can learn to sail. But the motor will never take the place of sails in point of healthful sport and real pleasure. More and more the inland lake boat owners are realizing this.

Another reason is that many of the older men have retired without leaving anyone to fill their places. This may be indirectly due to the motor boat; yet on certain lakes it is due to the local conditions. The older sailors have grown up with the clubs that they helped to organize and have kept in control, and by this have prevented, in a measure, the younger men from taking active interest in the management and responsibilities. They have done this unwittingly and naturally, since they were the best fitted for the leadership.

The question of money, also, is important to many of the clubs. Sailing, as it is done on the inland lakes, is not expensive, but it requires a certain minimum amount for new boats at intervals, for club upkeep and for boat transportation to regatta waters. The older men, for the most part, withdrew their money with their interest. Since there is no class in between to lend support, the expense devolves on the younger boys, who cannot meet it. Can the sailors, or anyone, blame the young men and boys for giving up racing when their clubs cannot pay boat transportation from one lake to another?

These, I think, are some of the reasons why inland lake racing is on the ebb.

But there are to-day a large number of young boys learning to sail and learning to handle their boats in a race. These boys are working at a great disadvantage, because they are getting but little training and still less support. In spite of this these young sailors are enthusiastic, and are waiting impatiently for a general revival of interest. How to bring this about, how to awaken interest in sailing, is a question that must be taken up by the men of each lake separately.

AN INLAND SAILOR.

The Q Class at Buffalo

Speaking of this transplanting of classes calls to mind the fact that out on Lake Erie the Buffalo sailors have succeeded in getting another first-class lot of boats in the Q class, Universal Rule, and are getting some fine racing with these able boats. Several Atlantic Coast champions are now owned in the Buffalo Yacht Club, including *More Trouble, Chaperon,* the champion, *Gray Jacket,* etc. This Q class is undoubtedly one of the best classes in which to sail, the boats being able and large enough to give fair accommodations and at the same time not so large as to make their upkeep a great expense. The Buffalo Yacht Club is wise in promoting this particular class.

Signs of Health in the A. P. B. A.

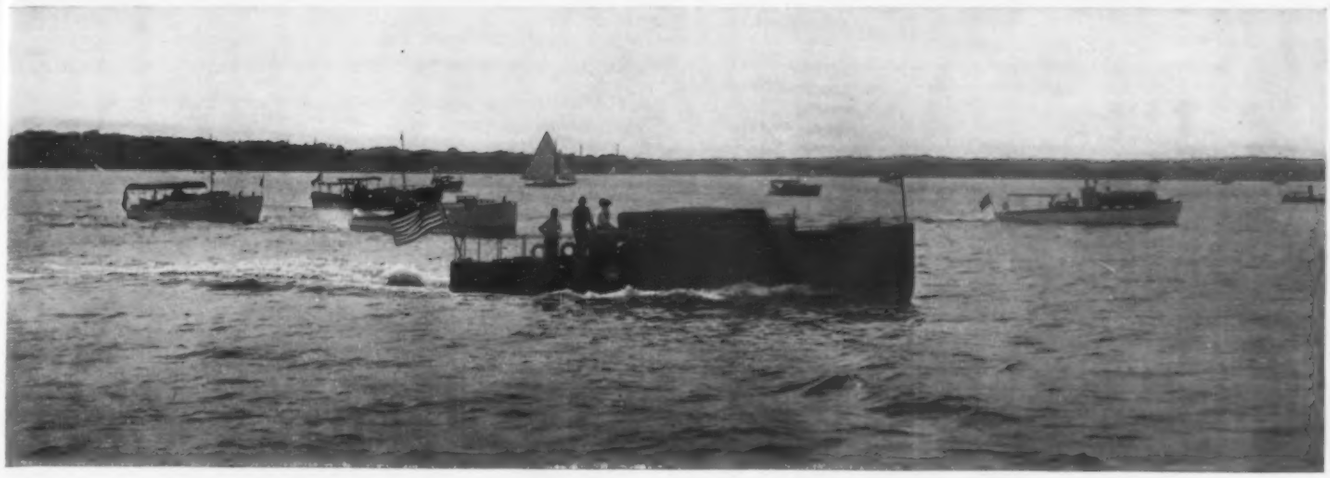
In another part of this issue is noted the formation of a new Canadian local section of the A. P. B. A., taking in the clubs of the province of New Brunswick, in the neighborhood of St. John. It is a gratifying sign to see the extension of a power boat racing association, as it tends to bring about more or less uniformity in power boat affairs; and it is to be hoped this association will make its influence strong enough to cause the new clubs across the border to feel the benefit of their membership.

Other local sections of the A. P. B. A. have been formed this last winter and spring in California, on the Hudson River, in New Jersey, and in various other parts of the country, which seems to indicate a healthy growth on the part of the association. The association must, however, prove itself worthy of the confidence that these local sections are showing, and must be an association in something more than name. It has proposed and put in print some much needed reforms, and it is hoped that it will and can carry them out. To this end they should have the support of every club that is a member of the association, even if the shoe pinches locally in some cases.

More About the America's Cup Challenge

Since a race in 1914 for the America's Cup seems a foregone conclusion, every detail concerning the contest is received with unusual interest. The announcement made recently that an amateur, Mr. W. P. Burton, would have charge of the new Shamrock has called forth much comment, and some of the newspapers have begun to throw doubts on the ability of an amateur to successfully compete with a professional in such a position. These writers have little cause to worry, however, for, if the report is true that Mr. Burton will have charge of the boat, he will undoubtedly be better than any professional in England. He has probably sailed more races in command of his own boat than most of the professional skippers, and he has beaten the best of them in large boats time and time again. His percentage of wins in the Octavia, his 19-metre cutter, was very high, and there are no tricks of yacht racing with which he is not familiar.

The mere fact that a man follows yacht racing for a livelihood and has mastered his profession does not necessarily imply that he is a better sailor than one who follows it for the love of the sport and who has had opportunity for gaining experience in handling a boat under all conditions. There are a number of amateur sailors both in this country and abroad who are, to our minds, the peer of any professional skipper alive to-day. They are the exception, of course, but when found they usually prove to have as much resourcefulness, daring, skill and ability as the professional.



Driftwood from Alongshore

The Block Island Races

Lack of wind was the only thing that prevented this year's Block Island race from being one of the best ever held, as the entry list contained the names of twenty-six sailboats ranging from the 24-footer Prowler to the P boat Wianno, 49 feet 6 inches long over all. The breeze was a very light westerly at the starting hour, 11 A. M., June 21, and later died out entirely in the center of the Sound, though it held fairly strong along the Connecticut shore, and enabled those four boats that had taken that course to pull out a long lead and eventually to win. Along toward daylight in the morning the breeze was fairly fresh, but later petered out and was light to the close. The winner of the first prize and handicap prize was Duchess, owned by C. Ratsey, while Okee, J. A. Mahlstedt, took the second prize; Wianno, William F. Hayward, third and time prizes; Nutmeg, A. C. Jones, of Boston, fourth, and Amada, B. R. Stoddard, fifth.

In the power boat race ten boats started at 5 P. M., one of the biggest fleets on record, racing for the Day Cup, and for the Thomas Lipton Cup in a special Viking class. The winner of the Day Cup was Kathryn S., with Alfred S. second and Frances H. third, though the measurements of the two former have been protested. The time prize was won by Blue Peter and the Lipton prize by J. H. Wallace's Thistle. The following are the summaries of the boats that finished in each race:

SAIL BOATS

Name.	Owner.	Club.	Allowance. H M	Corrected Time. H M S	Prize.
Wianno	Wm. F. Hayward	Harlem	5	25 13 35	3d and Time
Rohella	A. J. Diem	Port Washington	35	26 59 13	
Duchess	Chas. C. Miller	Northport	35	28 03 35	
Okee	J. A. Mahlstedt	N. Y. A. C	1 05	24 37 20	2d.
Amada	B. R. Stoddard	New Rochelle	1 10	26 23 04	5th.
Duchess	C. Ratsey	Manhasset Bay	1 20	24 19 30	1st and H'p.
Jabenoock	A. H. Ostrom	Northport	1 45	27 31 21	
Victory	H. A. Jackson, Jr.	N. Y. A. C	1 50	27 36 12	
Nutmeg	A. C. Jones	Boston	2 00	25 27 51	4th.
Mist	H. T. Hornedge	Harlem	2 15	27 45 00	
Sybilla	E. Lang	Harlem	2 20	26 58 40	
Wanderer	Wm. M. Friedlander	Sandy Hook	3 00	28 00 00	
Coat	H. Wennemer	New Rochelle	3 45	26 53 30	
Saxon	E. G. Faile	Byram River	4 20	26 55 00	
Alwyn	A. D. Seymour	New Rochelle	2 35	28 15 00	

Boat.	Club.	Allowance. H M S	Day Cup, Corrected Time. H M S	Allowance. H M S	Lipton Cup Corrected Time. H M S
Thistle	N. Y. A. C	Scratch	11 21 45	Scratch	11 21 45
Blue Peter	Hudson River	0 05 46	10 24 14	Not entered	
Respite	Hudson River	2 34 40	Broke down	1 18 30	
Elmo II	Horseshoe Harbor	2 40 53	10 14 32	1 30 51	11 24 34
Xilla	Stuyvesant	2 52 48	11 14 22	1 41 10	12 26 00
Frances H	Hudson River	2 07 41	9 51 49	0 36 43	11 22 47
Alfred S	Hudson River	6 22 49	6 41 56	Not entered	
Kathryn S	Morrisania	6 38 13	6 27 02	Not entered	
Curlew	Hudson River	1 13 35	12 28 15	Not entered	
Spare Time	Cliff Motor Boat	1 42 43	10 56 27	1 14 28	11 24 52

A New Section of the A. P. B. A.

The Eastern Canadian Section of the American Power Boat Association has recently been formed with over 1,200 members, consisting of the following clubs:

St. John Power Boat Club, Royal Kennebeccasis Yacht Club, Westfield Outing Association, Renforth Athletic and Outing Association.

The following are the officers: S. P. Gerow, chairman, St. John, N. B.; Dr. J. H. Barton, vice-chairman; A. R. Crookshank, secretary-treasurer.

The governing committee is as follows: Messrs. Gerow, Corey, Crookshank, Barton, R. D. Paterson, McAvity, Rothwell, Jarvis and A. P. Paterson.

Since the new year the American Power Boat Association has successfully formed these sections: California Section, Hudson River Section, Florida Section, Eastern Canadian Section and North New Jersey Section (forming).

Comprising over thirty clubs and about 4,000 members this is a most gratifying showing. The new Canadian Section is in a great and growing motor boating territory.

The Albany and Return Race

Ten boats started on the 235-mile long-distance race of the New York Motor Boat Club from New York to Albany and return on Saturday, June 28. This year a novel experiment was tried, in that each boat was allowed to start at any hour it saw fit between 9 A. M. and 5 P. M., giving each contestant a chance to figure on tidal conditions, probable time of arrival at Albany, etc., that might best suit his particular boat. Excellent time was made, three boats breaking the previous time record for the course, the winner, Blue Peter, beating last year's record of the Thistle by 3 h. 38 m. 39 s. Excelsior and Thistle also broke last year's figures.

Blue Peter had trouble with a cracked engine frame, but the crew on board repaired it very ingeniously and kept the boat going at full speed throughout the entire 24 hours of the run. Starting at 1:30 P. M. Saturday, this boat finished at 1:25:21 on Sunday, an elapsed time of 23 hours, 55 minutes and 21 seconds for the 235 nautical miles—truly an excellent showing.

Respite, owned by V. C. Pedersen, of the New Rochelle Yacht Club, was second on corrected time; Excelsior, T. Trolsen, won third prize, and Thistle, J. H. Wallace, finished in fourth place.

Fabian, the scratch boat, owned by W. E. Thomas, was well in the lead until 1 mile of the finish, when she burned out a bearing and had to be towed in, a heartbreaking experience after running for 234 miles of the course in the lead and being way ahead of all records. Following is the summary of the starters, ratings and allowances:

Boat.	Owner.	Start.	Rating.	Allowance. H M S	Viking Rating.
Fabian	W. E. Thomas	11.30 a.m.	53.0	Scratch	....
Thistle	J. H. Wallace	12.30 p.m.	51.2	39 03	39.7
Blue Peter V	A. Nachman	1.30 p.m.	50.6	52 36	....
Excelsior	T. Trolsen	12.00 noon	46.6	2 32 12	....
Francis H	G. W. Hoertel	3.00 p.m.	44.9	3 20 03	37.8
Oeyesee	J. Smith	5.00 p.m.	41.1	5 21 10	37.4
Bathurst	R. F. Nolley	10.30 a.m.	43.9	3 49 52	34.9
Lillian II	L. Walters	12.00 noon	41.4	5 10 59	....
Respite	V. C. Pedersen	11.30 a.m.	38.7	6 49 27	35.3
Ima Howard	H. Squires	11.00 a.m.	41.9	5 28 08	....
Geneta	H. J. Allen	Did not start	35.0		

Ocean Race to Winter Quarter Light Vessel

Although Tocsam II was first to finish in the race from Ocean City to Winter Quarter Lightship and return, the race was won by Commodore Lagen's Dream, Yachtsmen's Club, of Philadelphia, which was the third to arrive. Both these cruisers took part in the Bermuda race, and because of their showing in that event considerable interest was evinced in the present race.

Joseph Snellenburg's Mirna, Ocean City Yacht Club, finished third, and Dr. Eugene Swayne's Eugenia, Yachtsmen's Club, brought up the rear.

All the boats started at 12:52 o'clock July 5. They experienced a heavy wind and rain storm all the evening, and during the night they ran through a nasty squall, which was at its worst between 12 and 2 o'clock in the morning.

The average speed of the Dream was 7.75 knots an hour, or 8.92 miles, and that of Tocsam II was 8.40 knots, equaling 9.63 miles an hour.

	Rating.	Time Allowance. H M S	Elapsed Time. H M S	Corrected Time. H M S
Dream	37.80	2 46 33	26 04 03	23 17 30
Eugenia	40.42	1 21 36	27 43 25	26 21 49
Mirna	40.84	1 08 55	25 22 35	24 13 40
Tocsam 2d	43.2 scratch	24 01 33	12 06 35	24 01 33

Chicago-Michigan City Power Boat Race

The Columbia Yacht Club's long-distance race for power boats from Chicago to Michigan City brought nine power boats to the line, seven of which finished. The first boat in was Avis, which crossed the line at 5:58:45 P. M., though when corrected times were figured it was seen that Wee Wee had won by 4 minutes and 55 seconds. The following are the corrected times:

	Start. H M S	Finish. H M S	Corrected Time. H M S
Wee Wee	12 15 00	6 01 15	6 01 15
Francesca	1 36 17	6 06 10	6 06 10
J. V. Clarke	2 49 17	6 07 05	6 07 05
Avis	2 08 09	5 58 45	6 15 20
Fennwood	1 41 17	6 16 10	6 16 10
Fearnaught	2 15 00	6 25 50	6 25 50
Fleur de Lis	2 08 09	6 51 55	6 51 55

Cornfield Light Vessel Race in a Heavy Sea

In a strong southwest wind, punctuated with hard squalls and heavy rain, seven motor boats took part in the annual long-distance motor boat race to Cornfield Light Vessel and return, held under the auspices of the Colonial Yacht Club. The boats were started Saturday afternoon at 2:30 P. M., off the Colonial Yacht Club in the Hudson River, the course being down the Hudson, around the Battery to Cornfield Light Vessel, and return over the same course. Frances H., J. W. Hoertel, was the winner on elapsed and corrected time.

The second prize went to H. M. Betts's Virginia, whose corrected time was 19:24:10, and Respite, owned by Dr. V. C. Pederson, was third, with Tec, owned by W. T. Wheeler, fourth. Of the nine boats which started Saturday, seven finished. Frances H. led all the way.

Frances H. won four trophies, including the challenge prize offered by Senator C. C. Hunt; also the time prize and a trophy for finishing fourth in the Entertainment Race, which was held yesterday afternoon over a 12-mile course.

The finishers, their owners and times are as follows:

Boat.	Owner.	Elapsed Time. H M S	Corrected Time. H M S
Frances H	G. W. Hoertel	21 47 11	19 03 43
Virginia	H. M. Betts	26 48 20	19 24 10
Respite	Dr. V. C. Pederson	25 20 57	19 55 50
Tec	W. T. Wheeler	23 12 10	21 43 18
Blue Peter V	A. N. Achsmann	23 42 43	22 54 18
Rosa	F. Cohen	26 38 49	23 20 07
Madeline II	O. J. Reilly	*23 47 25	23 47 25

* Scratch.

Conditions for the New Rochelle-Providence Long-Distance Race

The long-distance race from New Rochelle to Providence in connection with the race week of the Narragansett Bay Yacht Racing Association, August 7 to 13, for a cup presented by YACHTING to the N. B. Y. R. A., will be started on Wednesday, August 6, at 10 A. M., off the New Rochelle Yacht Club, Echo Bay, New Rochelle.

The Course—The course will be from New Rochelle, through the Sound, around Point Judith, and up Narragansett Bay to the finish line off the Rhode Island Yacht Club, Pawtuxet, R. I., a distance of about 145 nautical miles.

Yachts will be sailed together in one class.

Measurements will be over-all length only, and this measurement will constitute the rating for time allowance. Yawls will receive an additional allowance of 5 per cent and auxiliaries 5 per cent.

The handicaps will be figured on the regular handicap table of the Narragansett Bay Yacht Racing Association.

There will be no restrictions as to light sails, except that boats will not be allowed to use sails that they do not usually use when racing—in other words, "foolish sails" are barred.

There are no restrictions as to the number or make up of the crews.

Boats must be at the New Rochelle Yacht Club anchorage, New Rochelle, N. Y., by 8 o'clock of the morning of the race, and must report to the committee.

Entries will be received by the regatta committee of the New Rochelle Yacht Club—H. L. Stone, G. P. Granbery, P. C. Pfeiffer—up to Tuesday, August 5. Arrangements at the finish will be in charge of Mr. T. R. Goodwin, of the Rhode Island Yacht Club.

Circulars containing full conditions may be had from the regatta committee or by writing to YACHTING.

Program of the Narragansett Bay Yacht Racing Association Race Week, August 7 to 13

Special Classes—The following special classes will be provided for, and will race under rating rules as herein noted:

Class P, Universal Rule; sailing under the rules and measurements of the Atlantic Coast Conference. Class Q, Universal Rule; same as Class P. Buzzard's Bay, 30-foot class; sailing without time allowance under the regular class restrictions. Class I, 18-foot knockabouts; sailing under the rules and restrictions of the Narragansett Bay 18-foot knockabout association. Class K, Sonderklasse; sailing under the rules and restrictions as adopted by the German-American Sonderklasse Committee.

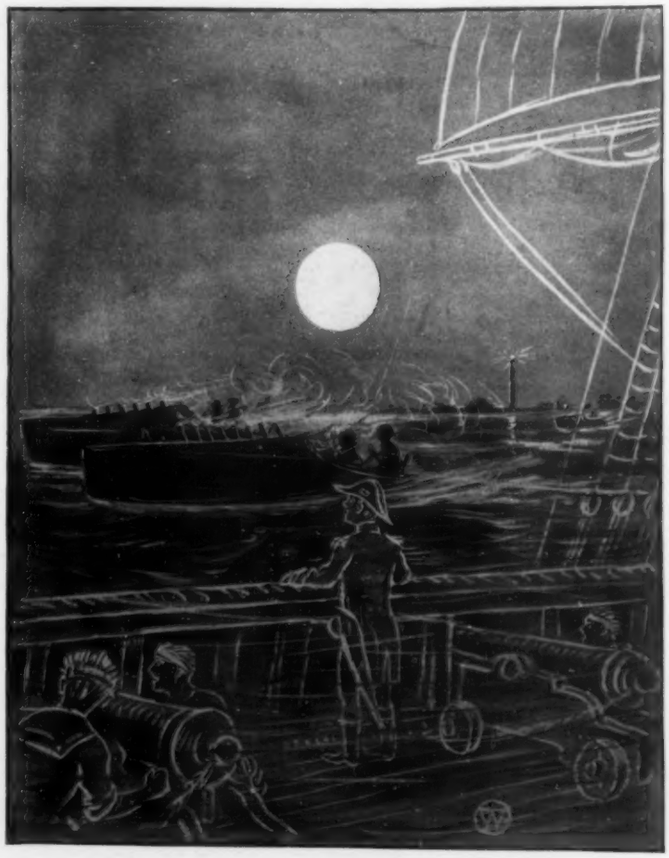
One-Design Classes—The Warwick Neck, Conanicut Y. C., Westport Harbor, Buzzard's Bay, or any other one-design class, may race as a class under their own rules and restrictions.

Percentage Handicap Class—A percentage handicap class will be arranged and handicapped, if a sufficient number of owners signify their intentions of entering.

Cruise Race—From Newport, R. I., to Pawtuxet, August 7, 1913, for all yachts sailing in one class. Measurement to be based on over-all length only, and no restrictions on size or kind of sails carried or number of crew.

Start—Starting line to be between judges' boat flying flag of Newport Y. C., and anchored off dock on east side of Goat Island and head of dock. Start to be made from south to north. Preparatory gun at 2:30 P. M.; warning gun at 2:40 P. M.; starting gun at 2:45 P. M.

Daily prizes and series prizes will be given in all these events.



THE SPIRIT OF PERRY AT THE MODERN BATTLE OF LAKE ERIE

From a Drawing by W. T. Farwell

This "old salt" thought he'd earn the $1,000.00!

(We offer $1,000.00 reward if Valspar Varnish turns white in water.)

So when they had the big buoy ashore for repainting, he varnished it with Valspar according to directions. He figured that between getting continuously soaked with the water and dried by the sun, Valspar on that buoy would turn white just the same as any other varnish would.

Every day since they planted the buoy again, he has been rowing out around it to see the white spots. That was five weeks ago. The exercise is fine; but he hasn't claimed any money so far!

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Valspar suits you in every particular or we refund your money, even though you have used the varnish. Think of that! It's waterproof; dries over night; is *extra* durable. Sold by dealers. Write for nearest dealer's name, instructive book on how to varnish boats, and free two-ounce sample can.

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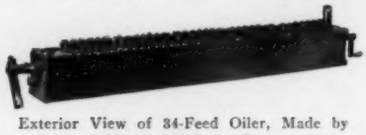
OF INTEREST TO THE SKIPPER

A Large Detroit Oiler

We reproduce herewith two interesting pictures of a 34-feed Detroit mechanical force feed oiler, the largest ever built. One cut shows the exterior view of the oiler completely assembled, and the other shows the complete mechanism attached to cover and removed from the tank.

This oiler provides for the lubrication of each moving part of the complete power plant through individual leads going direct to the part requiring lubrication. Oil is supplied by individual pumps —one for each feed—with a force sufficient to overcome, if necessary, a back pressure of 1,000 pounds, enough to dislodge any obstruction that might tend to clog up the oil passages.

Each pumping mechanism is a separate unit in itself, and has its own regulation and sight feed,



Exterior View of 34-Feed Oiler, Made by Detroit Lubricator Co.

Complete mechanism of 34-feed Detroit oiler, the largest ever built

so that the quantity of oil fed to any particular part may be determined and fixed exactly. As all the pumping units are actuated by one shaft, which is in turn driven from some moving part of the engine, and the rate of feed is consequently dependent upon the engine speed, and once the rate of feed is determined for any speed and so adjusted the increase or decrease in engine speed causes the oil to feed faster or slower accordingly, so that at all times exactly the right amount of lubricant is supplied to each part.

The regulation is very fine, and a feed can be adjusted by turning a thumbscrew to feed anything from almost a solid stream to a fraction of a drop.

This oiler has a partition dividing the tank into two compartments, one for a high-grade gas engine oil for the cylinders, etc., and the other for a heavier, cheaper oil for the bearings and gears.

Sterling Engines in Bermuda Races

The following letter from "Doc" Street, captain of the Tocsam II in the recent Bermuda race, is a high tribute to the engines in that "sterling" little racer:

JULY 7, 1913.

Sterling Engine Company, Buffalo, N. Y.:

GENTLEMEN:—Tocsam II won two out of the three prizes offered for the race from Ocean City to Bermuda and return, and, so help me Jimmie Johnson, we should have won them all.

Our steersmen were old timers at the sailboat game, and they naturally luffed into the heavy seas when we had the worst weather. This sent us off to the east, and it was impossible to tell how much we were off our course, as we had neither sun nor stars from the time we left Philadelphia until Wednesday. As soon as we could get a sight we found that we were 160 miles to the north and east, and this broke my heart, as I knew that it put us out of the race.

I must say that the Sterling engine is the best piece of mechanical skill ever put together for a motor boat. The engine never missed a stroke nor gave us a minute's trouble from the start to the finish. I felt sure of it from the first trial trip I had aboard, and the wonderful service it rendered us proves that you know how to build what is wanted for motor boats. It is with pleasure that I tell you that your patent suction pipe from the engine base to the carburetor is, without a doubt, a blessing to any yachtsman, as the engine room on the Tocsam was clear of gas and smoke the entire trip. Even when the boat was closed down tight for safety the engine room could be lived in, and was a comfort instead of a hell filled with burnt oil and gas.

The ignition system used on the Sterling is the best I have ever seen, and we never had cause to change the plugs during the entire trip of over 1,500 nautical miles.

With a Sterling engine I would at any time be ready to cross the ocean in any race that may be proposed, for the engine and its entire equipment gives one a feeling of comfort, pleasure and safety not to be equaled.

Yours very truly,
C. S. STREET.

N. B.—Tocsam II is a 45-foot cruiser, designed by M. M. Whitaker, and powered with a four-cylinder Sterling engine, 25-35 horsepower, 5½-inch bore, 8-inch stroke; weight, 1,600 pounds.

Motor Company Holds Water Carnival

The Evinrude Motor Company, of 205 T Street, Milwaukee, Wis., manufacturers of the Evinrude detachable rowboat motor, held an extensive water carnival at Waukesha Beach, Saturday, June 21.

Although the company has held events of this kind nearly every year since it started in business, the carnival of this season was perhaps the largest and most successful of any. A great many races between motor-driven rowboats were the interesting sights of the day. The free-for-all race, which was open to anyone who had an Evinrude motor, had over 200 entries.

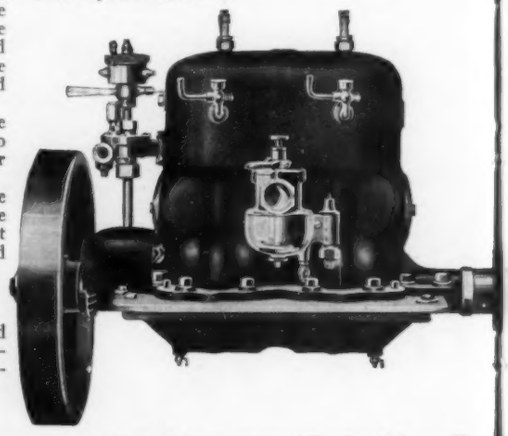
Besides races in motor-driven rowboats there were races between motor-driven canoes, and when these little crafts, equipped with Evinrudes, skimmed over the water at nearly 12 miles an hour it clearly demonstrated that a new sport had been created, and one that was sure to meet with great favor.

Start of race in which all boats were propelled by Evinrude motors

During the day one of the canoes collided with two rowboats while going at a terrific speed. The force of the moving boats were such that the canoe rode right up over the gunwale of one of the rowboats and then capsized. The man operating the motor in the canoe, one of the officials of the Evinrude Motor Company, pulled himself out of the water, turned his canoe right-side-up, bailed it out, and started the motor again. The same motor and the same canoe that were in the accident were used thirty minutes later in the canoe race.

Ideal Engine for Auxiliary Power

The Gray Motor Company, of 7304 Gray Motor Building, Detroit, Mich., is putting out an engine for auxiliary use which they claim to be one of the finest little engines yet designed for use in yawls, sailboats, etc. This is the double-cylinder, 6-horsepower Model U.



Gray model V 2 cylinder motor especially adapted for auxiliary

This particular engine is well adapted to this kind of service, because it is an extremely simple, compact, lightweight engine. The cylinders are cast *en bloc*, and according to the power delivered probably take up less space in a boat than any gasolene engine ever designed. The Model U is only 12 1/16 inches high from base to top of cylinder, and from center of the couplings to the outside of the fly wheel the measurements are only 24 11/16 inches. The engine has bore 3½ inches by stroke of 3½ inches, and weighs only 138 pounds. There are no lubricators to watch. On this model the latest and most up-to-date system of lubricating through the gasolene is employed, making it one of the most simple and easy-to-care-for engines that could possibly be imagined.

One of the features in its favor is its extreme smooth running qualities, and the fact that it develops power considerably in excess of the rating given by the manufacturers, and at 800 revolutions per minute. The engine runs like an electric motor, and delivers a good, honest 8-horsepower. The engine is of the straight three-port type; has no valves or other complications. It starts easily and is equipped with a perfectly designed device which absolutely prevents back firing.

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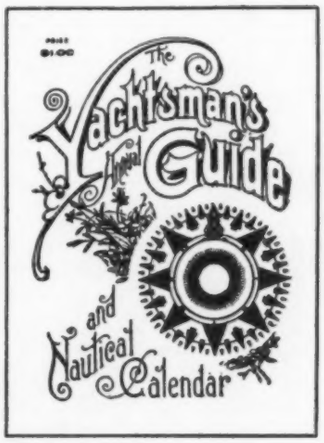

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George

(*Continued from page 85.*)

with this end of cotton twine. Before I fairly realized that he had actually conceived it possible with the limited means at hand to attempt repairs he was twisting the fly wheel as though he thought he could make the engine start.

And—believe it or not—the engine did start. It gave a few tuberculous coughs, and stopped. George, wrinkling his forehead, probed around the vibrator with a greasy forefinger. Then he wound her up again—and again—and once more (I don't know how many agains). And finally the engine commenced its merry little tune, threatened a couple of times to end it, and in the end, with George holding his substitute vibrator in place by his forefinger, settled down to stemming the time on its own account and took us back to the Dolabran without a skip.

"How in the world did you manage it?" I asked.

"It wasn't hard when I got the idea," the engineer returned. He was, however, manifestly pleased with himself, as according to my reckoning he had every right to be. "If I had had a screwdriver to get that screw and the broken end of the vibrator out with, it would have been easier. As it was, I used the terminal for a socket to set the other end in, caught the fork of the terminal under the broken piece, bound it in place with the twine, and held it from slipping with my finger. You know you ought not to be afraid to try to make your own repairs. You can't tell what a good job you can do until you have tried."

That was George. And at the risk of cutting into the business of the boat repair shops, I pass his axiom along to every owner of a motor craft.

An Old Sailor's Yarns

(*Continued from page 96.*)

twelve and takes our names, and we goes with him into a boat and off alongside of a ship, and we jumps aboard and goes down into the hold and goes to work. She were ballasted with sand, and it had jist been hove down the main hatch, and were layin' there in one big pile. One of the officers of the ship come down and divided us into two gangs—six for'ard and six aft—and told us how far fore and aft he wanted it, and we went to work. None of us had the least suspicion of anythin' bein' wrong; we'd had the same job aboard of a dozen ships before, 'cause it were a common thing, wharfage being' very dear, for the ship to have her ballast bundled into her in this way, and then go into the stream and hire men to trim it. So, you see, none of us was likely to suspicion anythin', and I don't believe one of us even know'd the name of the craft we was aboard on. She were a three-decked ship, and in course her lower hold were dark, and we had to work by the light of lanterns, which this officer—the second mate he were, we found out arterward—hung up to the stanchions. He stayed down there with us about a quarter of an hour, and then he goes on deck, and there bein' no one left to look out for us, of course we took our time, and didn't work to hurt ourselves.

"I suppose it might have been a couple of hours arter we come down when we perceived by the swingin' of the lanterns that there were a considerable motion to the ship, and a chap by the name of Joe Allen—about the only one out of the lot I know'd—says, 'It must have breezed up since we come aboard; I never know'd sich a swell in this harbor afore; we'll git a wet jacket goin' ashore, sartain.'

"'By George,' says I, as the ship give a regular pitch, 'one would almost swear she were at sea, instead of layin' at anchor'; and so we chatted away about the motion of the ship; but not one of us suspicioned in the least that we was at sea in reality.

"By and by some one sings out, 'Below there!' 'Hallo!' one of us says. 'Knock off that ballast now and come on deck.'

"Up we went, sir, and I wish I may die, sir, if that ship didn't have every stitch of canvas onto her, headin' off about west, with a fresh breeze about two p'ints abaft the beam and the land about ten miles off.

(*To be continued.*)

Pounding of Hydroplanes

(*Continued from page 87*)

deal less than a second, but it is impossible to say exactly how much time is taken in absorbing the blow. Probably the whole amount is done in one-fifth of a second, while two-thirds of the total will be done in the first one-tenth second. If this be the case, and the "landing" be done on only 20 square feet of surface, the striking pressure will be:—

$$\frac{3{,}700 \times 2 \times 10}{3 \times 20} = 1233 \text{ lbs. per sq. ft.}$$

Is it any wonder that these boats need heavy construction in their bottoms, or that fastenings tend to pull through? The wonder is more that they stand up to the punishment as well as they do, and it seems that great credit is due to the builders for managing to produce jobs that *will* stand up. The stresses induced by pounding can be greatly reduced by forming the sections so that more time is taken up in absorbing the blow. That is to say, making the sections more V-ed will allow the boat to sink into the water deeper on "landing," so that the work is done more gradually. At the same time, this sinking means greater loss of speed; and, however harsh it seems, it must, undoubtedly, pay to make a hydroplane that will keep on top of the water as much as possible. Where the Fauber type of hydroplane gets the greatest pull is in a short sea that will not permit of *very* high speeds with either type. It can make good going, never jumping clear, while a flat-bottomed hydroplane would be jumping and pounding unmercifully, yet unable to make the regular leaps such as we have been considering.

In Fig. 4, the boat is striking the water at an angle of about 27 degrees, so that the force acting on the bows square with the mean water surface will be:—

$$\text{Sin } 27^\circ = .454 \times 143{,}000 = 65{,}000 \text{ ft. lbs. sec.}$$

As the bow is of V section, it dives into the water and absorbs the work more or less gently, taking a second or so over it and distributing pressure over a considerable surface. Supposing the bow to be of square section (of profile like that given by the chine line), the work would have to be done on about 25 sq. ft. in, say, one-fifth second, so that the pressure per square foot would be approximately 13,000 lbs.! This, of course, would mean a bad smash-up—which is just what one would expect under the circumstances. In practice, it is doubtful if a punt-bowed hydroplane could be driven up to 35 knots in such a bad sea, but the swell of a steamer might do the trick if the skipper did not happen to be watching for it.

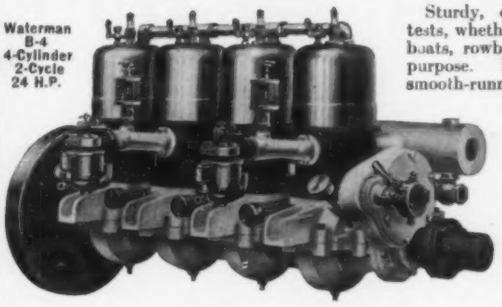
Refitting a Whaler

(*Continued from page 89*)

try of a former era that attracts the attention of the present generation and stirs the memory of the older with thoughts of the grand old days of wooden hulks, when ships were ships, and not, as the whaleman disdainfully designates steamers and iron ships—pieces of machinery or tea kettles with masts and sails.

The oakum is rolled loosely into a small rope-like strang as large round as one's two thumbs. An end is placed in a seam and driven firmly in with a calking iron. In former times to set the oakum and keep it from puffing up and working out the seam was smeared with melted pitch. At present white lead is used, serving the purpose

Two Motors that Have Made the Waterman Reputation World-Famous



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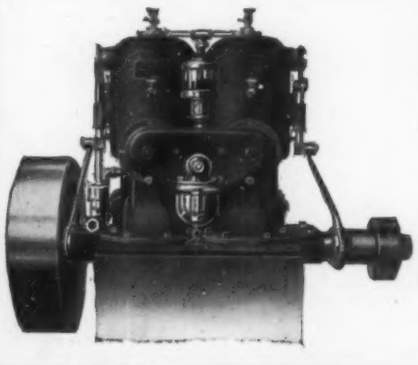

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fully as well and being far less difficult of handling.

Back in the palmy days, when all was hustle and bustle with the arrival and departure of ships daily, the railways were taxed to their utmost to accommodate the "keels" that needed coppering and calking. Vessels were slid off the ways as soon as they were coppered as high as their unloaded water lines and the work finished from rafts alongside.

The cost of coppering and calking a vessel similar, for instance, to the bark Morning Star, 238 gross tons register, is between $1,200 and $1,500—no small item in the expense of fitting out.

These two branches of work constitute a trade which has to be learned just as does a plumber's or machinist's, and the work to-day is done mostly by old men, survivors of the time when it was a flourishing business.

Ediana Wins

(*Continued from page 94.*)

the throat halyard gave way under the protracted strain, and because it was not possible to go aloft in such weather a temporary one had to be rigged out of the spinnaker and balloon-jib halyards.

Dawn was making when we sighted Fire Island light from *Ediana*, and, the wind heading us toward the beach, we soon deemed it prudent to go about, for it was thick and the shore line was not visible. At sunrise the atmosphere cleared and we were able to ascertain that no sail was in view.

Half way across the bay the breeze started to head us and then suddenly to haul. As a result we didn't weather the Point and were about to tack ship when a vicious puff knocked us over, and the starboard shrouds—evidently chafed off their lashings during the night—whipped out of the spreader and left the mast without support. The helmsman promptly swung *Ediana* into the wind again, and avoided a likely accident, but in so doing had to head inside a buoy marking a sandbar. A hasty glance at the chart showed nine feet of water before us, however, and as we drew only seven-six *Ediana* was allowed to glide in stays while one of the crew snatched a bit of line and sprang up the stick. He had barely made the shrouds fast when there came an ominous bump that threw us forward and nearly hurled the man aloft from the mast.

Only lightning action—and luck—took us out of the ugly hole. *Ediana* was jerked hard on the starboard tack, with jibs to weather; and the full force of the wind striking her suddenly, she heeled over to an alarming angle. But this cut her draft and, twisting and squirming like a winged bird, she worked herself painfully off the bar.

It was a shaken crew that thankfully crossed the line ten minutes later, to hear that no other boat had reported. But anxiety was still in store for us. The tide that had ebbed against us for for the last six hours was just beginning to flood; the breeze, which had been a gentle zephyr since early morning, was developing into a near-gale. It meant an overwhelming advantage to the long-mark boats, still on their way.

With watches in hand we sat scanning the horizon for an hour and a half that seemed an eternity. But no sail appeared to snatch victory from us; we saved our time with plenty to spare. *Amada*, lugging sail, and in a shower of foam, came up in a couple of hours after us, but it was night before the burning of a blue coston off the club anchorage told us *Hyperion* had safely completed the journey.

Racing Calendar for August

1-2—Gold Challenge Cup Races on the St. Lawrence.
1—Delaware River Y. R. A. Keystone Y. C. race, Tacony to Cape May.
2—Olympia (Wash.) to Victoria, B. C.
2—Stamford Y. C.
2—Hempstead Harbor Club.
2—Marine and Field Club.
2—Lynn Y. C.
2-3—Chicago Motor Boat Club. Cruise to Michigan City.
2—Columbia Y. C. (Chicago). Cruise to Waukegan.
2-3—Western Power Boat Assn. Annual regatta.
2-5—Larchmont Y. C. Cruise.
3—Ocean City Y. C. Open regatta.
4-10—Victoria (B. C.) Y. C.
5-6—Lake Michigan Yachting Assn. Annual regatta at Milwaukee.
5-6-7—Mississippi Valley Power Boat Assn. Annual regatta.
7-8-9—Columbia Y. C. Lipton Cup races.
7-14—Race week of the Narragansett Bay Yacht Racing Assn.
8-9—Race meet at Peoria, Ill.
8-9-10—Chicago Motor Boat Club. Cruiser race to Peoria.
9—Holly Beach Y. C. Joint race between Cape May, Holly Beach and Wildwood.
9—New Rochelle Y. C. Annual cruise.
9—Harlem Y. C. Special handicap race.
9—Erie (Pa.) Y. C. Bang-and-go-back race.
10—Hudson River Motor Boat Club.
10—Pistakee Y. C. Power boat race.
11—First race for British International Trophy.
11—Hamilton (Ont.) Centennial Week.
13—Babylon (L. I.) Y. C.
13—Riverside Y. C.
14—Sayville (L. I.) Y. C.
15—Bellport (L. I.) Y. C.
16—Chicago Carnival. Eight days.
16—Delaware River Y. R. A. Speed boat races.
16—Cape May (N. J.) Y. C.
16—Flat Rock Motor Boat Club. Annual speed boat race for Commodore's Cup.
16—Chicago Y. C. Waukegan race.
16—Harlem Y. C.
16—Atlantic Y. C.
16—Winthrop Y. C.
16—Belle Harbor Y. C. Mid-summer regatta.
16-17—Portland (Ore.) Motor Boat Club. To St. Helen's, Ore.
16-17—Chicago Motor Boat Club. Open day for postponed races.
16-23—Power boat races of Lake Michigan Yachting Assn.
17—Cleveland (Ohio) P. B. Club. Race to Vermilion.
17—Pacific Motor Boat Club. Speed boat race.
19—Columbia Y. C. (Chicago). Sealed orders.
23—Delaware River Y. R. A. 18-mile race for speed boats, Bridesburg Y. C.
23—New Rochelle Y. C.
23—Northport Y. C.
23—Bensonhurst Y. C.
23—Boston Y. C. at Hull.
23—Bellport Bay Y. C. Annual cruise.
23-24—Chicago Motor Boat Club. Jackson Park.
24—Hudson River Motor Boat Club.
24—Pacific Motor Boat Club. Cruiser race.
24—Pistakee Y. C. Power boat race.
30—South Jersey Y. R. A. Cape May Yacht and Country Club.
30—New Rochelle Y. C.
30—Buffalo (N. Y.) Perry Centennial racing events.
30 to Sept. 1—Chicago Motor Boat Club.
30 to Sept. 1—Columbia Y. C. (Chicago).
30—Bellport Bay Y. C. regatta.
30—Jackson Park Yacht Club's Michigan City.
30—Seawanhaka-Corinthian Y. C.
30—New Haven Y. C.
31—Pistakee Y. C. Sailboat races.

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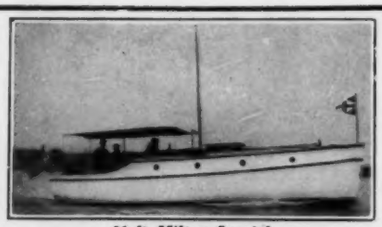

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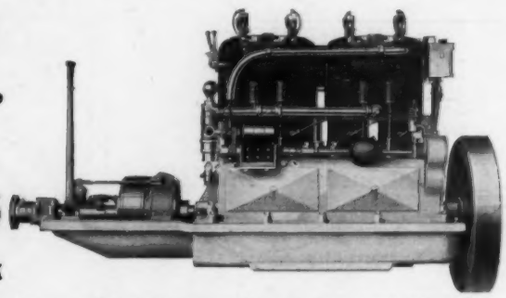

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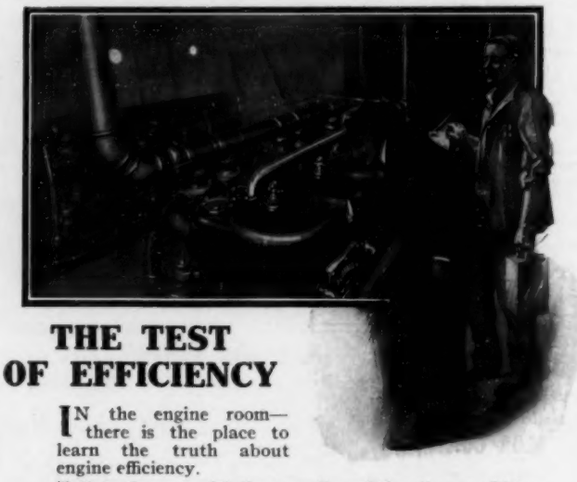

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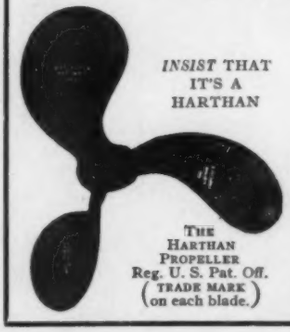

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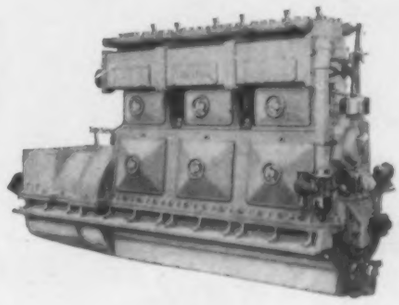


WINTON

MARINE ENGINES

ARE conceded to be unequalled in material and workmanship and operation.

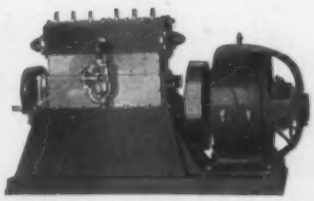
NO marine engine has ever approached the smooth, clean, quiet operation of a WINTON.

CHROME Vanadium crankshafts and reverse gears, nickel steel studs and bolts where there are working strains, hardened tool steel spiral gears in the cam shaft drive.

EVERY working part enclosed, even the fly wheel, so clean is the operation that we finish WINTON engines in white enamel and nickel plate all polished and bright parts.

IN A HIGH GRADE MOTOR YACHT, YOU SHOULD HAVE ONLY THE BEST POWER PLANT AND THERE CAN BE ONLY ONE BEST ENGINE AND THAT IS A WINTON.

Made in sizes from 60 to 200 H. P.



The Winton Small Generator

We consider this the finest balanced, the cleanest and smoothest in appearance, the quickest and best proportioned generator set ever offered.

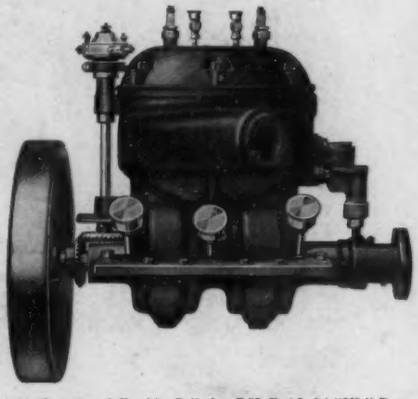
It consists of a 5 K.W. Crocker-Wheeler generator direct connected to a six cylinder T-head 3x6 motor with the valves entirely enclosed. So thoroughly quiet is its operation that even when working on its full load the breaker box on the magneto makes more noise than any other working part on the engine. Its governor is so sensitive that it goes from full load to no load with the least possible variation in its speed load. Its oiling system is automatic and when the machine is once started no further attention is required.

The WINTON GAS ENGINE & MFG. CO.

2120 West 106th Street CLEVELAND, OHIO

The Matchless Eagle at a Matchless Price

This is the Momentous Time of the Year



1913 High Speed Double Cylinder, 7-H. P. Model "2K." Bore 3½-Stroke 3¼-Weight 136 lbs.

Completely Equipped with Excelsior float-feed marine carburetor, with option of Schebler carburetor, "Black Eagle" spark plugs, roller contact timer, bronze plunger pump with self-contained check valves, priming cup, grease cups, ball thrust bearings, flange coupling, "Eagle" water-cooled exhaust silencer, wrenches, screw driver, can of cylinder oil, can of grease, two oil cans, lag screws and instruction book. **Price, $95.00**

16 Other Models to Choose From.

This is the time of year when everyone interested in boating is enjoying the season's pleasure. The demand for engines, supplies and fittings is urgent, and it is important to supply this demand, and do it promptly. Of course, we are interested in the supplying of engines. Our line was never so complete as it is for the 1913 season. Our capital enables us to manufacture large quantities of engines during the winter months. We have "Eagle" engines for immediate shipment, just when you want them, and that in most cases, results in a sale. If you are a legitimate boat builder or dealer, our selling plans are such that you can purchase "Eagle" engines. We want you to feel free to come to us, even though you have never talked our product. "Eagle" engines are made so good and are sold at such attractive prices that a lucrative business is in store for you. There is a great advantage in associating yourself with a big, live institution, one competent to co-operate with you, one that can deliver the goods when wanted, one whose product has enjoyed for many years the confidence of the trade. Take a good look forward, think it over seriously, and let us get together.

THE STANDARD COMPANY, Torrington, Conn.

Our 1913 Catalogue is worth writing for, and a request will bring it by return mail.

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